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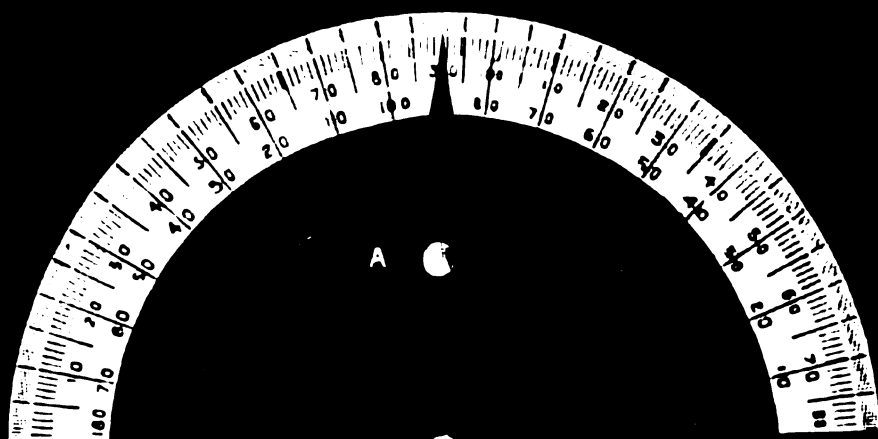
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American Medical Association

This is incomplete

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OF THE

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CONTAINING

THE OFFICIAL RECORD OF ITS PROCEEDINGS,

AND THE

REPORTS AND PAPERS PRESENTED IN THE SEVERAL SECTIONS.

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ORIGINAL ARTICLES.

THE MEDICO-LEGAL ASPECT OF ABDOMINAL SECTION.

Read in the Section of Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, Nashville, May, 1890.

BY A. VANDERVEER, M.D.,
OF ALBANY, NEW YORK.

A year ago I had the pleasure of presenting to the Section on Obstetrics and Diseases of Women and Children, American Medical Association, a paper on "Concealed Pregnancy, and its Relation to Abdominal Surgery." In the preparation of that paper considerable time was devoted to the compiling of a table of cases wherein abdominal section revealed an undiagnosed pregnancy. This table is measurably complete, and journals, by extract and summaries, have given a wide circulation to the paper and the table. While that table was in preparation, from letters and other sources, my attention was called to the medico-legal aspect of abdominal surgery, in its general relations, and to the probable testimony of expert witnesses in the cases where an action for malpractice is brought. For this, and the other reason that two American surgeons have already been compelled to plead to an indictment of manslaughter, it seems to me profitable to join this paper rather as a supplement to the one of last year by considering certain medico-legal points of abdominal surgery. A letter from a very eminent American surgeon in relation to one of these cases, says, "For my part I do not see how the error occurred," and I have numerous other letters stating that we ought never to be unable to diagnose pregnancy, especially after the fourth month. Testimony such as this would have been very dangerous to such as Professor Freund, Karstrom, Wm. Varian, Professor Czerny, Professor Byford and others equally as competent, had they been placed on trial for malpractice.

We all may at any moment be placed upon our defense by clamor of the public press, which seldom, very seldom, gets down on the right side of any medical question. Dr. Mary A. Dixon Jones is a conspicuous example of newspaper

persecution, which happily she overwhelmed. Designing attorneys, with prospects of good fees, may urge unwilling people into litigation, or avaricious relatives may, failing in levying blackmail, institute an action. Motives no different from these give rise to nine-tenths of all actions for malpractice.

In case of the death of the patient the surgeon may be proceeded against, criminally, by an indictment for manslaughter, and civilly, by an action for damages. One action criminal, is no bar to another civil, for damages, nor can the result in one prejudice the result in the other. If the surgeon be proceeded against by an indictment, in my own State, New York, the indictment is drawn under the provisions of the Penal Code, Section 195, viz.: "A person who, by an action of negligence or misconduct, in a business or employment in which he is engaged, or by any unlawful negligence or reckless act, occasions the death of a human being, is guilty of manslaughter in the second degree."

In States where no statutory provisions have been enacted, the indictment is drawn at common law. At common law, "If a physician or surgeon or any person assuming to be such, by his gross negligence, or gross ignorance, or by his rashness or want of proper caution, causes the death of his patient, it is manslaughter." (Field's Medico-Legal Guide.)

As the statutory provision is drawn from the common law and depends for its interpretation on the interpretation of the common law, we can find no clearer demonstration than that of Lord Ellinborough (Rex vs. Williamson, 3 C. & P. 635), in his charge to the jury. He says, "To substantiate the charge of manslaughter the defendant must have been guilty of criminal misconduct arising, either from the grossest ignorance or the most criminal intention. One or the other of these is necessary to make him guilty of that criminal negligence and misconduct which was essential to make out a case of manslaughter. It does not appear that there was any want of attention on his part and from the evidence of the witnesses, on his behalf, he possessed some degree of skill." (The defendant in this case had forcibly torn away a prolapsed uterus, following delivery). "I think the defendant could

not possibly commit such mistakes in the exercise of his unclouded faculties, and I own that it appears to me if you find the defendant guilty of manslaughter, it will tend to encompass a most important and anxious profession with such dangers as will deter reflecting men from entering into it." (The verdict not guilty was entered in this case). So far as I am able to learn, charges to juries have been uniformly that gross neglect or gross ignorance, or both, must be shown on the part of the prosecution beyond a reasonable doubt before conviction can be had. Then, as has already been shown, the prosecution must stand or fall upon the proof of gross negligence or gross ignorance, one or both, or in other words, criminal misconduct. Gross ignorance and gross negligence are both questions of fact, and must be passed upon by a jury. In consequence, the standard of care and skill form that, and other facts and conditions, must be a variable one. But they are not questions of fact purely. It is the duty of the court to charge the jury with reference to degrees of care and skill by definition and illustration. It has been maintained that it is impossible to make precise distinctions between negligence and gross negligence. Mr. Justice Bradley (U. S. S. C. Reports,) says, "In deciding the question of negligence where there is any conflicting testimony, and ordinarily where there is not, all the facts and circumstances should be submitted to the jury with instructions to the jury that in deciding whether there was ordinary care or gross negligence, they are to consider the position of the party, his business, his duties and responsibilities, and that the same act which under some circumstances would not show any degree of negligence might under others, show want of ordinary care; and under still other circumstances might show gross negligence, and this should be settled by the jury as a question of fact, and not by the court as a question of law."

Gross ignorance is open to the same objection that gross negligence is, viz.: of being relative. That which under some circumstances would be ordinary skill, in other circumstances would be ignorance, and, in still other circumstances, would be gross ignorance. The very favorable rule of law has been laid down that, "The least amount of skill therefore, with which a fair proportion of the practitioners of a given locality are endowed, is taken as a criterion by which to judge the physician's ability or skill." (Bouvier's Inst. 1004-5.) "The surgeon must adopt the means and apply the skill well settled by the highest lights of his profession. He must possess and practically exercise that degree and amount of skill, knowledge and science which the leading authorities have pronounced as the result of their researches and experience up to the time, or within a reasonable time before the issue or question to

be determined is made." (Elwell on Malp., 55.)

Again surgeons residing in the large cities with hospitals and other superior advantages, will be required to possess greater skill than those living in localities remote from such advantages, and there seems to be a consensus of judicial opinion that unless specifically contracted for, the surgeon is only bound to exercise the ordinary care and skill.

By way of illustration let me present a single case the kind of which is not likely to occur again. Surgeon A. is called to a case of abdominal tumor. By examination he finds that the patient is thirty-six years, married twenty years, no children. The tumor has been growing eight months. Patient has never menstruated regularly, often not flowing for five or six months, and now has not menstruated for eight months. She has vomited and been constipated at intervals, has felt no quickening and does not believe herself pregnant. Vaginal examination reveals a cervix high up, somewhat enlarged, os uteri not patulous or particularly enlarged, unable to make out body of uterus. Upon abdominal examination a distinctly fluctuating tumor is made out located centrally and evidently from the physical signs contains fluid within a cyst. The diagnosis of ovarian cyst is made, and an operation proceeded with. Upon opening the abdomen the tumor appears. The walls are thin and not of unusual appearance; the trocar is introduced and six quarts of fluid withdrawn, after which the operator finds he has tapped a pregnant uterus. He completes the operation by a Cæsarian section, and in five days the woman dies of septicæmia. Surgeon A. is indicted for manslaughter, the indictment averring that he through gross ignorance, by gross negligence, by rashness or want of proper caution, caused the death of his patient. The indictment is drawn under the provisions of the common law of the State in which he resides. Surgeon A. pleads not guilty, and the trial is proceeded with. The prosecution prove the facts as have been heretofore stated, and call expert witnesses to prove gross ignorance, gross negligence, want of caution or rashness. The only way they can demonstrate the facts so essential for conviction, is by expert testimony. The chief question involved and presented with earnestness: Was there sufficient symptoms of pregnancy present to arouse the suspicion of pregnancy, and did the defendant exercise sufficient care and skill in making his diagnosis? The opinion of the witnesses for the prosecution is that sufficient symptoms, amenorrhœa, vomiting and the presence of a tumor was sufficient evidence of pregnancy to require a most searching examination before pregnancy could be excluded, and that the defendant was negligent and unskilled in his examination. It is shown that he did not examine the breasts for the changes that

occur in pregnancy, that he did not inspect the vagina for the change in color (wine leaf), he did not seek to illicit ballottement, that he did not lay sufficient stress upon these and other symptoms as to the probabilities of pregnancy, and that a proper explanation of the possibilities of her condition was not made to the patient and to her friends, previous to the operation. That no suggestion was made by the operator as to the necessity of exploratory incision, if at all in doubt as to the diagnosis.

The defendant showed by competent witnesses that he had exercised the average care and skill in examining the patient, that he had not acted with undue haste or rashness, and that he was honest in his belief that the case was one of ovarian cyst. He admitted having committed an error of judgment, which he believed was liable to occur in the hands of surgeons of good reputation under existing circumstances. The case was ably tried and the jury brought in a verdict of guilty. It was carried to the next court, and there the court on argument overruled the verdict, presenting some very strong points on the subject, part of the line of argument being that the surgeon was shown to have been a man of great experience, of large practice, a man who stood extremely well with his professional brethren, who had for years maintained a high reputation, very far above the average. That the verdict rendered by the jury was not for the public good and that the conviction ought not to stand. No further attempt was made by the prosecution.

Another case which illustrates ninety-nine per cent. of the cases of concealed pregnancy, where an operation has been done, is surely not so easy of diagnosis, being that of Surgeon B., having a patient aged fifty, married many years, always sterile. Fibroid had existed for twenty years or more, pregnancy not suspected. A hysterectomy was done for the removal of the fibroid, and when the uterus was opened, to his own and everybody's surprise, the surgeon brought out a buxom foetus which seemed also very much surprised, for it immediately began to cry. It proved to be at least eight months old and all right. There was also a very large fibroid which was very vascular. Unfortunately the patient died soon after. Surgeon B. was tried for manslaughter and acquitted.

Perhaps one of the most unpleasant cases of malignant persecution is the case of Surgeon C., where after careful explanation to the patient of the physiological change that would take place, and her condition after the operation, it was finally decided to remove the uterine appendages. The operation was done, the patient recovered, and some months afterward a suit was brought against Surgeon C. for wilful mutilation. It was shown that all proper explanation had been made to the patient and to her friends, that the opera-

tion had been skillfully done, and the patient made a good and speedy recovery, and yet the jury disagreed. A second trial took place some time after and the surgeon was acquitted, yet he had been to great expense in his defense and had lost much valuable time, but the laws of his State afforded him no redress whatever. I might cite other cases, but can say earnestly, and for the comfort of the honest and well-meaning surgeon, that I have not been able to find a case where conviction has occurred and the higher courts have sustained the verdict. A careful study of the rulings of the courts and charges made by judges to juries in such cases, brings up prominently the fact that the law recognizes no one school of medicine. The doctor must practice the necessary skill in the diagnosis of his cases and he must exercise the average degree of ability in the doing of the operation, and that he is not supposed to do more than is required of the person possessing an average amount of skill. Another point that seems to have been presented with considerable force by some of the rulings, is contributory negligence on the part of plaintiffs. In several operations it was shown that the plaintiff wilfully withheld from the surgeon certain symptoms, and that she purposely misled him by making statements of conditions that did not really exist. This would have been the case had Drs. Prince and Varian's cases been presented for trial. Beyond a doubt on these points alone plaintiffs would have been ruled out of court.

Referring once more to the case of Dr. Jones, which has been so recently before the profession, she says in answer to a letter of mine that "She is glad to know that the subject of the medico-legal aspect of abdominal section is to come up for discussion at this meeting," and states as follows: "There is a necessity to look into these subjects. Under the existing laws of the State of New York, a surgeon has no protection. If, in his efforts to relieve the sick and suffering, he decides to do abdominal section, or indeed to perform any surgical operation, and if, notwithstanding his best directed efforts, the patient should die, he is liable to, or may have a suit for malpractice or an indictment for manslaughter in the second degree. If the patient lives and does well there may still be a suit for malpractice. The surgeon may spend his strength, his time and give his best efforts to relieve the suffering poor, yet under the law, and by the law, these same persons, for whom he has labored, may turn and rend him and use every effort for his destruction, personal and professional. Malice at any time may so construe the law that at any unexpected moment the surgeon or physician may find himself in the most serious and unpleasant difficulties. Thus it is simply dangerous to practice medicine and surgery in the State of New York.

A distinguished lawyer said to me the other day, that however well prepared he might be, yet he would not, as the law at present stands, *dare* to practice medicine, and he thought he had about as much courage as most people.

Section 200 of the Penal Code, says:

Liability of Physicians.—A physician or surgeon who being in a state of intoxication administers a poisonous drug or does any other act as a physician or surgeon to another person which produces the death of the latter is guilty of manslaughter in the second degree.

But according to Judge Bartlett's ruling, "Physicians are also liable under Section 193 of the Penal Code in connection with the proceeding provisions." Subdivision 3 of Section 193 says: "By any act of procurement or culpable negligence." This comprehends a great deal and can be made to mean anything. A physician or surgeon though he may have the best preparation, yet by any act of procurement as administration of medicine or surgical operation, if the patient dies he may be found guilty of culpable negligence. There will always be found physicians who would have used different procedures, or advised another course as preferable.

If a surgeon for the welfare of a patient deems it best for him or her to perform abdominal section and death ensues, malice can, under subdivision 3 of Section 193, have him indicted for manslaughter in the second degree.

If a surgeon neglects to perform abdominal section, when in the estimation of another it should have been performed, and the patient dies in consequence of the pelvic conditions, that surgeon under Subdivision 3 of Section 193, of the Penal Code, can be found guilty of culpable neglect, and indicted for manslaughter in the second degree.

Judge Bartlett says further: "If a person assumes a certain amount of skill, and does not develop that amount of skill, his act is guilty of culpable negligence." How largely malice or blackmail may misjudge this skill and use the law for direct persecution, or as the *New York Medical Journal* puts it, for "Roasting Physicians."

Notwithstanding the strong points she presents, I am of the opinion that the courts have ruled in justice to all concerned in these cases. It is necessary that the public have proper protection, that while we must advance in our profession only by experience and accumulated skill in the doing of untried operations, yet in their performance great caution and the careful study of cases becomes a necessity. It will be observed that, while it has been a great hardship and required much resolution for the surgeons who have been attacked to defend themselves, yet they have in the end triumphed.

What I would like to see as the result of this discussion is, the betterment of our laws in this, that surgeons may have better protection in the

recovery for loss of time, for expenses they have been put to, when it is proven that the case was urged by some disreputable lawyer, or by those personally malignant, within or without the profession.

My conclusions would then be:

1. That we should exercise the greatest care in the examination of our cases of doubtful diagnosis.

2. That when in doubt we should lay great stress upon the necessity of an exploratory incision, and make a very proper explanation of what this means to the patient and friends.

3. That in the cases thus far brought to trial, we have reason to believe that the judges in their rulings have treated our profession with great fairness, the strong points being, that the public good is not subserved by undue and wilful persecution of the surgeon who has shown the proper amount of intelligence in his profession.

4. That we should seek still to have the law so made in our favor as to eliminate the cases of wilful prosecution.

5. That in the careful study of these cases we have presented the lamentable condition of expert testimony. Men absolutely ignorant upon the subject, men who have never done an operation of any merit in surgery, being allowed to come upon the witness stand and testify as experts.

THE MEDICO-LEGAL ASPECT OF EXPLORATORY LAPAROTOMY.

Read in the Section of Medical Jurisprudence at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY W. C. WILE, A.M., M.D.,
OF DANBURY, CONN.

All abdominal operations which involve section of the peritoneum are in a measure exploratory. The parts we seek are out of sight, and it is only from the signs, symptoms and history of the case that we can make a diagnosis; and the diagnosis warranting it, we are justified in entering the cavity. We are justified in entering the abdominal cavity, I say, for in the present light of anti-septic surgery, and with the statistics which we have to-day of successful laparotomies, hesitation on the part of the surgeon to attempt *e. g.* to free an obstructed intestine when the symptoms pointing to it are manifest; or to proceed to surgical interference in a case of appendicitis when the indications for such interference are clear; or to explore in cases of abdominal tumors where diagnosis is probable and the life of the patient is endangered; or even to explore where, in cases of profound shock proceeding from some internal source which points to lesion of the abdominal viscera or pelvic contents—hesitation to proceed to surgical relief in such cases is negligence on

the part of the surgeon, as much so as delay to open a knee-joint filled with pus, or to tie a severed femoral artery. Abdominal surgery to day is a recognized proceeding, and given a case, with diagnosis as clearly defined as is possible, where prolonged suffering or death is imminent from a continuation of affairs, nothing short of exploration to ascertain exactly what the matter may be and with a view to affording relief, is warranted. How true is the affirmation of A. W. Mayo Robson, F.R.C.S., that an exploratory operation has frequently proved curative when apparently nothing beyond incision and exploration by the fingers has been effective. The following case probably explains the nature of these cures. In the Hospitals ("Tidende," 1889), Dr. Howitz describes a case of strongly adherent omentum, with displacement of the stomach and intestines. The patient had been treated for gastric ulcer, also for "the womb;" pessaries had been applied, and douching and massage of the hypogastrium practiced in vain. Dr. Howitz carefully liberated the omental adhesions, so that the displaced viscera returned to their normal positions. All the pain and discomfort from which the patient had so long suffered rapidly disappeared.

How much assurance can we obtain from the successful statistics of Mr. Lawson Tait, who is reported to have performed 135 consecutive laparotomies without a death! Successful abdominal operations with different degrees of extensiveness have been performed upon every abdominal organ. The progress of surgery in this direction is truly marvelous, and as we review in our minds the list of operations which have been successfully performed for gastrotomy, pylorotomy, gastroenterostomy, gunshot wounds of the stomach and intestines, gunshot wounds of the stomach and liver, resection of the intestines, intestinal obstruction, typhlitis, perityphlitis and appendicitis, colotomy, extraperitoneal hepatotomy, hepatorrhaphy, hydatid cysts of the liver, cholecystotomy with ligature of the cystic duct, cholecystenterostomy, cyst of the pancreas, abscess of the spleen, splenectomy, hydatid cysts, wandering or floating spleen, rupture of the kidney, nephrorrhaphy, nephrectomy, diaphragmatic hernia, and the operations for inguinal hernia, we cannot stop short of wonder at the scientific perfection of surgery at the present day.

Now, in the light of all these attainments in abdominal surgery, what shall we do when we are consulted in reference to some condition existing within the abdominal cavity which we recognize as probably jeopardizing the patient's life? Shall we mask the only possibilities of relief through interference, by simple palliation? Shall we put our trust off, assuming ignorance as to any further relief than simply the relief from pain, and keeping the vital machine in motion, until the wheels become clogged, or some pipe

bursts? Shall we, because the operation is attended with some danger, deprive the patient of the only possible chance of escape? And shall the reward be awaiting us, that if the condition of that man or woman is in whatever manner made worse from the attempt, we shall have to suffer the penalty of the law for our efforts? How grand, on the one hand, the idea; on the other how small! But it is with all possible care and precaution that any such surgical step should be undertaken. The first great step to be considered before proposing, or consenting to operate, is *diagnosis*. The symptoms of obstructed intestine or of ruptured extra-uterine pregnancy are fairly well defined, and, placed in one side of the balance, operative interference; what can be found to counterbalance the other side, when on the one hand the obstruction has remained for three days, if forsooth so long; or on the other hand, our ruptured tube has been recognized?

It was my sad lot during the past year, to be obliged to stand by, and witness the life-blood ebb away from a ruptured pregnant tube, because the family would not consent to an operation. Slowly and surely the lamp of life grew dim, until in eight hours from the time I was called to the patient, she had breathed her last.

In this case the diagnosis was absolute: Profound shock, dulness, gradually increasing in the left hypogastric region, the os uteri tilted forwards and high up, irregular menstruation, and the onset of the rupture, caused by a strain from lifting. Here a young life was lost, through what? The consent of the Church had been obtained (the patient was a Catholic)—through ignorance of the family and their friends, who preferred letting her die, rather than submit to a simple (comparatively so) operation which offered the only possible chance of recovery.

In this case, had the operation not saved the patient's life, of course the surgeon would not have been blamed, and no legal question would have arisen; but let us suppose a case where the symptoms are not so clearly defined. We are summoned in the night to see a woman suffering with intense pain in the left ovarian region. No tenderness can be found upon vaginal examination, the pain and tenderness are limited to the one spot over the ovary, no tumor can be felt.

Relief is obtained by the use of anodynes and counter-irritants, and in a day or two the patient is quite improved. A week or so passes and the doctor is summoned again. The pain is returned with all its vigor. The patient is once more relieved from pain, and continues so for two weeks, when she decides to visit New York City for a pleasure trip. While there the pain again returns and a specialist is called in, who diagnoses ovarian, or tubal disease, and proposes that she be removed to the hospital for the purpose of an exploratory operation, with the view of removing

the diseased parts if such be found. Thus far this case is actual, and occurred in the writer's practice. But she did not go to the hospital, neither did she have an exploratory incision made; but dismissing the specialist and returning to the family doctor of the friends in the city, and finally consulting two other physicians after her return home, she was finally cured by the last doctor, who rubbed on some smarting liniment, for the rheumatism which he said she had in the *end of the spine*, and which he said was the cause of her trouble. Now, laparotomy is not often advised for rheumatism in the end of the spine; but had she been operated on and recovered, all would have been well and good. But suppose (and here is the question of the paper) an exploratory laparotomy had been made and she did not recover, having succumbed, *e. g.*, from the shock of the operation, and the husband brings suit against the surgeon for damages, *what defensive argument can the doctor present in answer to the charges made against him?* This is what is meant by the title of this paper: "The Medico-legal Aspect of Exploratory Laparotomy." It seems to me that the answer as to the responsibility on the part of the surgeon resolves itself into the following: Laparotomy to-day is in skilful hands a recognized operation. There are certain conditions of disease or accident which can be reached only through abdominal section. The surgeon must be certain as far as possible from his diagnosis, that a given condition, or conditions warranting exploration exist. He ought to be accurately informed as to the correct method of reaching the parts through operative interference. He should know just when the operation ought to be performed in order to obtain the best, or safe results. Beyond this the responsibility lies with the patient, or the patient's friends. They should be informed of the danger of the disease as it exists unrelieved; they should be informed as to the gravity of the operation, and its risks, and they should be warned that in the event of unfavorable result, either through failure of the vital powers to stand the shock, or from a too great extent of diseased parts to permit successful manipulation; or even in the case of a possible mistaken diagnosis after sufficient consultation has been held, the doctor shall not be blamed.

Gentlemen, this is not too great precaution when undertaking such operations. We may be skilful operators; there may be money in the operation; it may bring us fame if we succeed—but the operation of opening the abdominal cavity and handling its contents is no child's play, it is a dangerous proceeding at its best, notwithstanding 135 successful consecutive operations; and a failure might bring the hands of the law heavily down upon the head of the would-be benefactor. But, bringing our best and cautious efforts to bear in a case where we are firm in our

conviction that the only salvation lies in operative procedure, we should not hesitate to give the patient every advantage of the enlightenment which is ours, the outcome of skilful experience.

TWO CASES OF HYPERTROPHY OF THE ADENOID TISSUE OF THE BASE OF THE TONGUE, ONE OF THEM PRODUCING "SERIOUS SYMPTOMS."

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY J. E. BOYLAN, M.D.,
OF CINCINNATI.

The pathological importance of the denser layer of lymphatic tissue which has been considered by various observers since Henle's time, and which Waldeyer has shown to exist, normally in an unbroken circle from the base of the tongue around the *arcus glosso-palatinus* to the tonsil of the fauces, from it to the tube lip and thence to the posterior upper pharyngeal wall on either side, was called into general notice some thirteen years ago by Meyer in his celebrated paper on "Adenoid Vegetations." Since Meyer's communication, repeated investigation of the structure and dimensions of this "lymphatic ring" by Lenschker, Waldeyer, Gerlach, Schwartz, Trautman and others, has demonstrated that besides at the fauces, principally in two well defined regions, is this tissue massed in a similar manner to that between the pillars. In the vault of the pharynx it exists no longer as a denser layer, but as a circumscribed and systematically arranged mass, comprising almost the whole thickness of the structure and attached by loose connective tissue to the *fibro-cartilage basillares*, no muscular fibres existing behind it. (1). It is further characterized by a grouping of the follicular glands containing their closed follicles and deep seated *asinus* glands, the ducts of which open upon the free surface and are filled with the usual gray mucoid substance.

Next important in point of quantity to the pharyngeal tonsil is the similar aggregation of this tissue at the base of the tongue; here it exists in the form of a denser layer extending usually across the whole *dorsum* and though varying in its dimensions is present in sufficient quantities to have induced Waldeyer to look upon it as nothing less than a flattened tonsil which he designates "*tonsilla lingues*."

Gerlach, who has traced this tissue upon the tube lip, has seen fit to speak also of a tonsil of the tube, though the strata is here much less dense, and according to Trautmann,¹ rarely, if

¹ Trautmann's work on Adenoid Vegetations with report of 190 autopsies.

ever, hypertrophies. It is however, not the province of this report to raise the already widely discussed question whether the term "tonsil" may be correctly applied to these structures, or to enter into a consideration of their function; but to submit that the lymphatic tissue at the base of the tongue, has, in common with the lymphatic tissue of the other parts of this "ring," a marked tendency to hypertrophy; that owing to its location and the fact that consecutive disturbances occur here less readily, its enlargement is frequently overlooked and that it at times gives rise to serious symptoms. In this connection I wish to report the following two cases which have come under my observation in private and clinical practice during the past three years:

Case 1.—Mrs. M. called on July 26, 1888, to consult me regarding a long standing and very irritable sore throat and for advice as to the expediency of spending the summer in the mountains of Vermont, for which region she was to start in a few days. Patient was 40 years of age, anæmic, emaciated and in an extremely weak and nervous condition, and had been under treatment for malaria during the winter. She had cystic enlargement of the thyroid gland, quite soft and movable, which had attained the size of an average orange, which, however, gave her so little trouble that she considered its treatment a matter of minor importance that might be undertaken after she had obtained relief from the very annoying symptoms within the larynx; these she described as pain, irritability, huskiness of the voice, the sensation of a lump in the throat which interfered at times with her breathing and a frequent desire to swallow. Inspection disclosed ragged honey-combed tonsils. The mirror reflected the somewhat enlarged arytenoids and the posterior half of the vocal chords, upon the latter some tenacious secretion. But the feature which at once arrested the attention was the condition at the base of the tongue. The whole of the surface between the fauces was raised to a pale tumor-like mass which completely overshadowed the epiglottis, its very irregular surface consisted of closely crowded pale tit-like elevations or lobules, some of them apparently as large as the tip of the little finger, which at first sight had a succulent appearance, but which the probe proved to be rather dense and resisting; between these prominences the probe sank readily into several deep fissures with perfectly smooth and flattened walls, which closed over the instrument as it sank so that they could not be detected by the eye. Patient and her husband emphatically declined any operative interference not absolutely necessary until she should have regained her strength. Ordered iron, cod-liver oil and a stimulating inhalation to be used during the summer. Patient promised to call immediately upon her return. September 5th patient presented herself

again, her general health much improved having gained in strength and weight. The tumefaction at the base of the tongue is, if anything, larger than when she went away, and the most serious complaint that she had to make during her absence was of an increased difficulty in breathing which became much worse at times when she lay on her back. Patient was obliged to go to New York on business for six weeks, but agreed to submit to an operation immediately upon her return. November 2nd patient and her husband called to state that during her sojourn in New York alarming dyspnoea had developed, so that she had to be propped up in bed at night, and that she had called in a well known surgeon of that city who saw in the enlargement of the thyroid the cause of the dyspnoea, and recommended ligation, alternately, of two of the thyroid arteries with as little delay as possible. The alarming symptoms, however, abated somewhat, and believing his wife not in condition to submit to so formidable an operation Mr. M. had brought her home to be treated according to some milder method. She was resting from her journey and would come to the office in a few days. A fortnight later I was called up at two o'clock in the morning to come in haste to the home of Mrs. M., who, the messenger said, was suffocating. I found her propped up in bed with slightly labored respiration, weak and much alarmed over an attack of dyspnoea which she was just recovering from. The enlargement of the thyroid was about in the same condition that it was four months previous, soft and not increased in size; but the change in the appearance of the swelling at the base of her tongue was striking. It was considerably larger and of a much brighter red—nothing could now be seen of the larynx but the posterior upper surface of the arytenoids and the epiglottis was so overshadowed that no part of it was visible. Free scarification with a laryngeal knife soon relieved all symptoms of dyspnoea and I left her promising to attack the swelling in a more radical way on the following day. Two applications of the galvano-cautery, which to my very nervous patient, were most formidable and painful operations, relieved her entirely and permanently of dyspnoea, though a serious attack of illness soon after confined her to her bed before the treatment was completed. I was fortunate enough to see her after a prolonged absence only last week, and though she could never bring herself to have the goitre energetically treated, she has remained quite free from all the symptoms in the larynx which had previously caused her so much distress.

Case 2.—Mr. H., musician, 22 years of age, has been annoyed of late by pain and irritation at a certain spot in his throat where he thinks a little piece of bone or bristle must have lodged which he can feel plainly when he swallows and

its presence causes him to swallow frequently. He has to cough a great deal and finds that his voice soon tires in conversation so that it becomes difficult for him to continue his instruction. Examination shows some indurated enlargement of the tonsils of the fauces—the larynx comparatively normal—at the base of the tongue there is hypertrophy of the adenoid tissue which increases in thickness as it reaches the median line, where there are eight or ten excessively developed nodules which overlap and lie upon the reddened and injected epiglottis. At the sides the epiglottis lies in close contact with this irregular surface of tissue and appears to be imbedded in it. Firm traction on the tongue discloses nothing of the sinus glosso-epiglottici, but the margin of the epiglottis can be seen to free itself from the overhanging tissue. After a liberal application of cocaine the bulk of the hypertrophy was removed with Hartman's pharyngeal curette in the reversed position very satisfactorily. At the second visit chromic acid was applied to the remaining excess of tissue, but by the act of deglutition, which the patient could not resist, the uvula and adjacent parts were brought into contact with the acid, and I have, therefore, not used it since. The treatment resulted in entire relief from all the symptoms.

As Swain (2), Curtis (3) and McBride (4) have pointed out, the symptoms of pain and irritation, the presence of a foreign body and impaired power of phonation which are almost invariably present in these cases, are probably produced either by direct mechanical interference with the movements of the epiglottis or by reflex irritating action upon the motor-laryngeal nerves. Though defective respiration may possibly also be due to the last mentioned cause, I am convinced that in Case 1 of this report, it was produced by direct infringement of the hypertrophied and inflamed tissue upon the region of the chink of the glottis. In both the cases there was enlargement of the tonsils of the fauces—in one granular pharyngitis. Observation for the past three years, wherever opportunity afforded, has convinced me that the condition of the tongue back of the circumvallate papillæ may vary from a perfectly flat surface, to one in which excess of tissue is quite apparent, and as Swain in his very excellent treatise on the structure of this tissue (2) has shown its enlargement to be a true hypertrophy, it will be frequently difficult to determine whether we have to deal with a normal or pathological condition. But as the excessive tissue is easily and quickly reduced the presence of annoying symptoms should be the indication for operative interference.

LITERATURE.

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SUGGESTION ON THE USE OF ELECTRICITY IN EAR DISEASES.

Read in the Section of Laryngology and Otology at the Forty first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY E. L. JONES, M.D.,
OF FLORENCE, ALA.

When I received an invitation from your Secretary to prepare a paper for the Section of Laryngology and Otology, my first thought was to decline, on the ground that it would seem like presumption for me to appear in the rôle of instructor to those so much my seniors in authority and experience as the members of this learned body. The remarks which I shall make at least present the merit of originality, so far as my knowledge goes, and the frequent occurrence and incurable nature of the affections to which they pertain certainly demands our thoughtful consideration of anything that may benefit the vast multitude whose hearing is impaired or lost through these diseases.

My conclusions are based largely on the successful applications of these principles to analogous conditions elsewhere, and somewhat on the results of a limited personal experience. Just here I would distinctly state that I had intended to keep these thoughts and practices strictly to myself until it could be proven by the crucial test of long experience whatever of truth or error there might be in them; but when the opportunity of presenting them to this Section occurred, it seemed an appropriate time to give them to those in whose hands it shall be found "whether they be of good or evil report." I am aware that in aural as well as other fields of medicine many and unreasonable things have been expected of electricity, and in referring to the authorities at my command, in some I find it not mentioned at all, in others only to be condemned.

After this preface I would direct your attention to what I shall entitle "The Thorough and Systematic Application of the Continuous Current to the Proliferous or Chronic Non-suppurative Inflammation of the Middle Ear, and to Similar Conditions from Long Past Acute or Suppurative Inflammation."

Let us first look at the pathological conditions present, and see what are the results from established methods of treatment. As you all know, repeated post mortems have shown in such cases that the drum head is thickened and inelastic, the lining of the tympanum hypertrophied, the ossicula wholly or partially ankylosed, and the drum cavity filled with organized fibrinous exudation, completely binding everything together; and this same hypertrophy generally extends to the Eustachian tubes, causing more or less stricture and impairment of functions. And your experience will also confirm the statement of authors that the maximum results to be hoped

for is to stop the further progress of the disease, and that, in spite of the most persistent treatment, the distressing tinnitus and deafness often go on to melancholy seclusion or the ear-trumpet. Surely any procedure that will throw the bright light of hope on this gloomy picture should be gladly welcomed.

I will first direct your attention to the indisputably successful application of the continuous current to analogous conditions elsewhere, which first led me to the thoughts embodied in this paper. For many years it has been known and acknowledged by those who have studied the subject, that there is nowhere so powerful a sorbefacient and local circulation stimulant as the continuous current properly used. By this electrolytic action immediate chemical and molecular changes in the tissue acted upon are effected, and this action continues after the applications cease.

For instance, this plan of treatment has been long and successfully used for localized effusions and exudations, urethral stricture, nævi, hypertrophied tonsils, and tumors of many kinds in various localities, where reasons existed for abstaining from more radical surgical methods, and, mostly of all, a subject toward which the eyes of the whole medical world are directed—Apostoli's treatment of uterine fibroids. By this latter a revolution has been wrought in gynecological practice, and numberless cases are cured which heretofore had either to suffer in silence or undergo the great risk of a most dangerous hysterectomy. This treatment has now won for itself a recognition almost universal, and its opponents are found only amongst two classes: those who have not tried it at all, or those who have tried without an adherence to proper indications or correct methods of procedure, according to which standard the most firmly established truths will fall. This plan is also successfully employed in chronic uterine hyperplasia, where the uterus is heavy, large and infiltrated with fibrous material, a condition in the womb quite similar to proliferous catarrh in the ear, in that both are very common, very distressing, and very difficult of permanent relief by methods heretofore in vogue.

It will be seen that in these troubles the electricity is not used with reference to its action on the nerves, as in most of its other therapeutical applications, but purely for its electrolytic and sorbefacient effects.

Under the Apostoli treatment large tumors are made less in size, and the enlarged and heavy uteri are reduced in bulk and hardness, giving great relief to the patient.

In cases of subacute and chronic cellulitis with exudation, semi or wholly organized, it will also promote absorption, and, if used early enough, prevent the adhesions which make the sequelæ of this disease so distressing. In this will be seen the analogue of the fibrinous exudation found in the ear.

Before describing my method of procedure I would make a few remarks relative to the polar actions of the current. Of course it will be understood that these apply only to the galvanic or continuous current, the Faradic and magnetic having none of these properties.

Experiment shows that if two needles attached to the poles of a galvanic battery be stuck into a piece of flesh and a sufficient current turned on, a decomposition called "electrolytic" will take place around the needles; acids will be generated at the positive pole, and alkalies at the negative, phenomena entirely independent of vital action. In living tissue it is found that the negative is the more congestive of the two poles, causing increased redness and vascularity of the locality to which it is applied. It is this pole we bring in closest relation to the tissue desired to be absorbed. In making these applications to the ear I use for the external meatus an electrode consisting of an insulated rubber speculum with handle, through which speculum runs a conducting wire. This is attached to the negative pole, and the patient inclining the head from the ear to be treated, the meatus is filled with warm salt water and the speculum introduced.

If the Eustachian tube is easily pervious, the positive pole is attached to an ordinary sponge electrode and pressed under the angle of the jaw of the opposite side. If the tube is not freely open, the positive pole is attached to an electrode consisting of a hard rubber Eustachian catheter with a copper wire running through it. The catheter, with the wire drawn inside, is introduced in the usual way, and the wire being held firmly, the catheter is withdrawn about half an inch, leaving the wire in the tube. The current is now turned on until the burning feeling is as great as the patient can comfortably bear, and continued from five to ten minutes. The oftener the treatment can be given, the better, but I know of no exact limitations as to the intervals between applications.

On inspection the drum heads will be seen to be intensely red and congested along the malleus handle and at the periphery, which increased determination is necessary to absorption. The tubes soon become easily pervious, even attracting the notice of patients. In time the drum head and malleus are seen to become more movable, and improvement in hearing goes along *pari passu*. In conjunction with this the ordinary treatment of the throat and naso-pharynx, with inflations, etc., should be used.

In the limited number of cases in which I have applied this treatment it was only used after the regular orthodox methods had been tried long enough to show their inutility, and in all the improvement was most marked afterwards.

I have not yet had a sufficient number of cases to base much upon the result of experience. My

location is in a small town where material is not abundant, and I have not been using the method long; but if I shall succeed in directing the attention and work of the profession to what may prove a very valuable addition to our means of combating this deplorable condition, I shall feel that my efforts have not been in vain.

THE VALUE OF THE LEITER INCANDESCENT-LAMP URETHROSCOPE IN THE DIAGNOSIS AND TREATMENT OF CHRONIC URETHRAL DISCHARGES.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association at Nashville, Tenn., May 20, 1890.

BY JOHN B. DEEVER, M.D.,

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Having used the Leiter incandescent-lamp urethroscope for some time with most gratifying results, both in the diagnosis and the treatment of

The Leiter incandescent-lamp urethroscope (made by Leiter, of Vienna), consists of three pieces: the handle, the lantern, and the urethral canulæ, or tubes. The handle is made of vulcanized rubber and has upon its upper end a small incandescent lamp, which is connected with the two binding screws projecting from its lower end.

The light steel spring on the side is the key by which the current is connected and broken. The handle fits into the bottom of the lantern.

The lantern is a gutter-shaped box, roofless, having at one end, which I will call the ocular end, an obliquely placed concave lamp for the purpose of reflecting the light of the lamp along the urethral canula, or tube, also a movable lens intended for either long or short-sighted observers. At the other end (the distal) is a nozzle for fitting on the tubes. In addition to this is also noticed small perforations in the floor of the lantern immediately around the lamp, which are intended to carry off the heat. The urethral tubes are of different sizes, intended, of course, to be used in different size urethræ. The larger the tube used the more satisfactory will be the examination, and, if necessary, I do not hes-

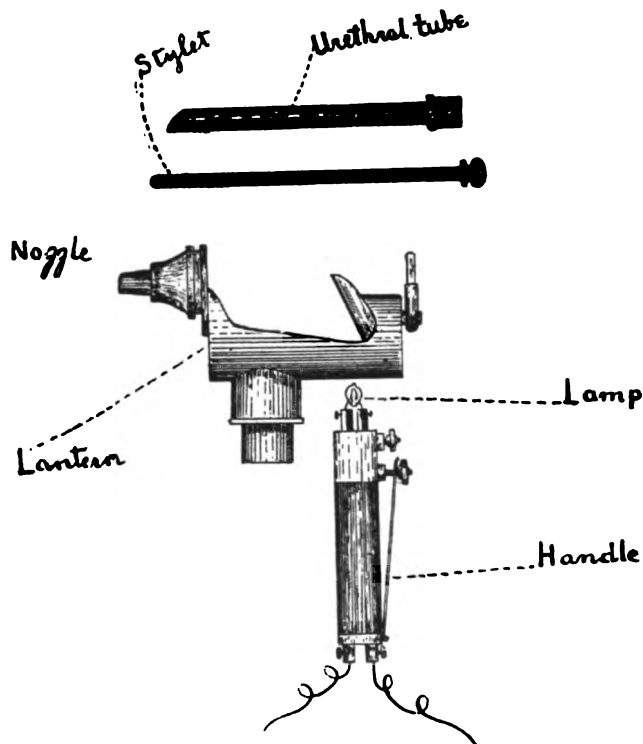


FIGURE 1.

chronic urethral discharges, I have felt that it would be of interest to present my views upon the advantages offered by this instrument, at the same time illustrating my remarks by the citation of a few of the many cases I have recorded in my case-book.

itate to enlarge the meatus, which in most cases we find contracted, this, in some instances, relieving the patient of the trouble of which we are trying to learn the nature by the urethroscopic examination. The nearer the size of the tube approaches the normal calibre of the urethra, the

less likely are we to overlook a fold which may be the seat of a small patch of disease. The mirror is to be so adjusted as to reflect the light along the tube.

The construction of this instrument is so simple that it very seldom gets out of order. The most delicate part is the lamp, which after being used some time requires changing, as it is apt to become blackened. This is done by simply removing the handle and loosening the two small screws holding the lamp in place, when the lamp is lifted out and replaced by another, care being taken to secure it by tightening the screws. The handle is then replaced and fixed. In adjusting the lamp care must be taken to have it at a proper level, otherwise there will be insufficient illumination. To avoid all annoyance it is best when inserting the handle into the lantern to light the lamp and test the amount of illumination by placing the end of the urethral tube, adjusted to the nozzle, against a dark surface, when by elevating or depressing the handle the proper level can be obtained.

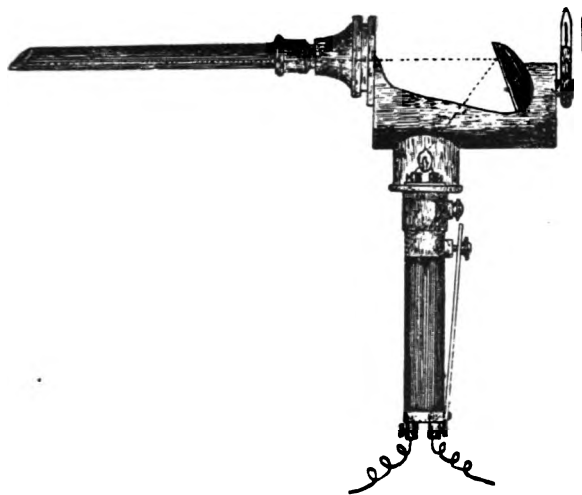


FIGURE 2.—Urethroscope ready for use.

The two forms of battery used by me in lighting the urethroscope, are the Julian storage system and the Grenet or plunge battery.

The Grenet or plunge battery, which I prefer, is made by Mr. Flemming, of Philadelphia, and consists of a box containing two equal compartments, the first of which is occupied by a series of rubber cells, one-half filled with the following solution: potassium bichromate, 6 ounces; sulphuric acid, 5 fluid ounces; water, 3 pints. This solution must be removed every two or four weeks, according to usage. The second compartment contains one large cell, the object of which is to catch the drip from the plates after their removal from the bichromate bath, and also to protect them.

These two compartments are covered by a bed, the under surface of which is divided into two equal parts, one-half being covered by a sheet of rubber, to close the cells when not in use, and the other half occupied by a number of sets of plates. Each set is composed of two carbons and one zinc-plate, which are fastened to the bed in the usual manner, and so connected as to have independent action, the number of cells being thrown into circuit as required. After using the battery and wishing to discontinue the current, it is merely necessary to lift out the plates, change sides and deposit them in the one large compartment.

Upon the upper surface of the bed are a number of binding posts corresponding to the number of cells employed, and by attaching the cords in a proper manner the number of cells desired can be brought into circuit. On this surface there is also a rheostat consisting of a rubber plate wrapped with silver wire, connected with the cells and having a swinging arm which can be moved to any part of the plate; the object of the rheostat I will speak of later.

The other form of battery used by me is made by Waite & Bartlett, of New York, and consists of a carrier or box, containing four large storage-cells, each of which is composed of a rubber cup, a series of carbon and lead plates not in contact with each other, and containing a dilute solution of sulphuric acid which must be replenished from time to time. The materials used to connect these cells are narrow plates of lead, which are not acted upon by the sulphuric acid solution. These cells each measure two volts, and on increasing the voltage it is necessary to use a rheostat for reasons mentioned below.

There are two objections to the general use of the storage system. First, it must be charged from a dynamo, and second, its weight (from 90 to 100 pounds,) renders it inconvenient to carry.

The object in using a rheostat is to govern the current, to prevent burning out of the lamp, and to measure the exact resistance of the lamp. It is a well known fact that the carbons vary greatly in different lamps. In some the resistance is high, and such only burn when the rheostat is at its minimum; in others the resistance is so low that the lamps will not burn with a white light except when the rheostat is at its maximum.

Manner of using the instrument.—In using the instrument the position of the patient which I have found most satisfactory is the recumbent one, on a table or couch of considerable height, with the knees bent over the edges and slightly separated. The largest tube which the meatus will admit is now introduced, and passed gently through the urethra to the bulbo-membranous junction, unless obstruction is met with, when the stylet is withdrawn, the urethroscope ad-

justed, and the obstructing point examined. Great care is to be exercised in passing the tube, as it may induce bleeding, thus obstructing the field of vision. Where we are dealing with a much inflamed urethra, we will necessarily be annoyed more or less by a few drops of blood, and when this occurs it can be gently removed by a pledget of cotton carried down the tube by the applicator. In case the pendulous urethra is found normal I carry the tube into the membranous urethra by depressing the proximal end, and in this way examine the deep urethra.

Normal appearance of the urethra.—When at rest the walls of the urethra are closely approximated and the lumen varies in shape at different parts of the canal.

Commencing at the bulb and extending to within an inch of the meatus, the lumen is transverse or slightly oval; in the remaining portion it is either vertical or triangular, and at the meatus, vertical. The color of the mucous membrane varies from a pale bluish pink to a full, bright pink; generally it is very similar to the buccal and labial mucous membrane in the same individual. The brilliancy resembles that of the mouth. On slowly withdrawing the urethroscopic tube, the walls of the urethra will be seen to contract behind it. One of the most important characteristics of the healthiness of the spongy urethra is the evenness with which its walls will contract behind the retiring tube, or expand when it is advanced. A limited thickening in a small area will cause them to approximate irregularly. A scanty secretion of pus will destroy the lustre of the mucous membrane.

The lumen of the membranous urethra at the sight of the anterior layer of the triangular ligament, is triangular, which is due to the walls being less elastic than in the spongy portion; elsewhere it is oval. Owing to the presence of the urethral crest (*veru montanum*), the lumen of the prostatic urethra is crescent shaped.

All discharges, chronic in character, of the male urethra have been from time immemorial, and still are, known by the name gleet. The opinions advanced as to the pathological conditions present in gleet in the absence of a well marked stricture have been various, and not till recently has the proper aspect been given to these cases. The proper understanding of these conditions is solely due to the use of the urethroscope, which has been so perfected as to make the examination of the urethra, particularly the pendulous and terminal portions of the prostatic, as satisfactory, and in every sense as reliable, as is the examination of the eye-ground with the ophthalmoscope.

I believe, as does Professor Otis, that in the great majority of cases of gleet, one, and in some instances, more than one stricture is present, which, when situated in the pendulous urethra,

the usual site, can be most satisfactorily demonstrated by the urethral meter, and that the removal of the stricture by dilating internal urethrotomy will cure the greater number of such cases. I also believe that the minority of the cases are not the result of stricture, and can be correctly diagnosed, and thereby successfully treated, by the use of the urethroscope. It has been my experience to see a few cases, where, after a complete dilating internal urethrotomy, the discharge continued, though not to as marked a degree as before the operation, and where cure has promptly followed a few applications made to the affected portion of the urethra through the urethroscopic tube; also in cases where internal urethrotomy is practiced I am able to hasten the cure by local applications.

What are the varieties of gleet (meaning any chronic urethral discharge) met with and clearly demonstrated by those who practice urethroscopy?

In my experience with the use of this instrument I have been able to demonstrate the following varieties of chronic urethritis:

1. Simple chronic urethritis consisting of three different forms; one where the surface of the urethra is uniformly livid and moist; a second where, in addition to the above, are circumscribed areas involving the deeper portion of the urethra (the sub mucosa), resulting in the formation of nodular masses, slight, yet easily demonstrated by the absence of the normal elasticity of the urethra; and a third, where there are circumscribed areas presenting a granular surface, covered, in many instances, with adherent pus readily bleeding at the slightest touch, and most probably that variety of urethritis described by some authors as granular.

2. Follicular urethritis where the inflammatory process is confined to the simple follicles, lacuna magna, in some cases to the ducts of Cowper's glands.

3. Ulcerative urethritis, never present except when associated with stricture, the treatment of which calls for division of the stricture (dilating internal urethrotomy), and local applications made to the ulcer or ulcers made through the urethroscopic tube.

It is not uncommon to meet with two or more of the above conditions in the same case.

In the absence of the urethroscope, to ascertain the exact pathological condition which is keeping up the discharge in a large number of these cases, at least, is impossible. I have made the statement that, in my judgment, by far the greater number of such cases, are the result of stricture; but even so, a urethroscopic examination properly made tells us the exact condition of the urethra, both behind and at the strictured portion. The cases which I will now cite demonstrate the advantage of the instrument in the way of treatment.

Case 1.—J. D., aged thirty-eight, was admitted to the surgical wards of the Philadelphia Hospital, in February, 1890, complaining of a purulent discharge from the urethra, with pain upon micturition. History of gonorrhœa for four years, followed by stricture. Was operated on in the winter of 1889, at Bellevue Hospital, by Dr. Keyes. Urethroscopic examination revealed a small ulcer, one eighth of an inch in diameter on the floor of the pendulous urethra immediately in advance of the bulbo-membranous junction. A solution of silver nitrate, 10 grains to one ounce, was applied through the urethroscopic tube by means of the applicator. Two more applications at intervals of three days, were made, when the ulcer was entirely healed, resulting in the relief of all symptoms. The patient was kept under observation for one month, when he was discharged cured. This ulcer was evidently the result of the stricture, but, unlike it, was not cured by the internal urethrotomy, which, I believe, would often be found to be the case were a careful urethroscopic examination made in many of these cases where the discharge is still present.

Case 2.—C. D.; private patient; came under my care some months since, with a history of gleet of two years' standing. During this time, he says, he had several attacks of gonorrhœa immediately following connection; these were evidently not attacks of true gonorrhœa, but simply aggravations of the existing urethritis, the result of the venereal act. Examination of the deep urethra with a *bougie-la-boule*, and of the pendulous urethra with the urethræ meter, revealed the absence of stricture. This examination was followed by some bleeding. Urethroscopic examination revealed chronic urethritis, with three distinct granular points on the floor of the pendulous urethra, $2\frac{1}{2}$ inches anterior to the bulbo-membranous junction. The granular patch nearest the meatus bled freely when touched.

Four applications of a 20-grain solution of silver nitrate was made at intervals of five days. In addition to the application of silver solution, the patient used the following injection four times daily: sulphur-carbolate of zinc, 12 grains; sulphate of morphine, 4 grains; distilled water, 4 ounces. At the end of three weeks, all symptoms having subsided, treatment was suspended. The patient reported two weeks later, when a urethroscopic examination showed the urethra to be normal.

Case 3.—W. H.; private patient; came to me suffering from a chronic urethral discharge of four years standing, as a result of a very severe case of gonorrhœa. Three years ago he was examined by a genito-urinary specialist, who found a stricture of large calibre in the pendulous urethra. This specialist cut the stricture by dilatation internal urethrotomy, since which time the

patient has been passing, at stated intervals, a No. 36 (French scale) bougie. During the past three years, the patient states, he has had several attacks of gonorrhœa of a mild type, but these were evidently attacks of so-called bastard gonorrhœa. Examination for stricture showed the urethra to be normal throughout. Urethroscopic examination of pendulous urethra was negative, except at the point which had been the seat of the stricture; here there was an absence of the normal elasticity, particularly well marked on the floor, but otherwise normal. Examination of the membranous urethra showed mucous membrane or the anterior part of the floor to be dark red and presenting a distinctly granular area, bleeding upon the slightest touch. In the light of this examination, I made instillations, of five minutes each, of a 20-grain solution of silver nitrate, six in all, into the deep urethra with the Ultzman drop-catheter, at intervals of three days. This treatment not proving satisfactory I brought into the field of vision the granular area, and made two applications through the urethroscopic tube, this sufficing to accomplish the desired end. Some weeks since the patient wrote me that he was well.

Case 4.—G. G.; private patient; contracted his first attack of gonorrhœa in 1883. It ran through the three stages, and had all the characteristic symptoms of genuine acute urethritis. The treatment consisted of balsam of copaiba internally and various injections; it lasted four months. In 1884 he contracted a second attack, which did not differ from the first, excepting that it lasted six months. In 1886 he contracted a third attack, which was by no means as pronounced as either of the previous. He had merely a discharge which differed from that of the attacks in being thinner and whiter. The treatment was internal only, and consisted of paste of balsam of copaiba and of cubebs, for two weeks. He did not have connection nor did he drink any spirituous liquors for one month after the discharge stopped; when having transgressed from the path of virtue, upon the day following he had a return of the discharge. There was neither pain nor discomfort other than that occasioned by the presence of the discharge. He was again treated by balsam of copaiba internally and by injections, but not improving as rapidly as his medical attendant thought he should, the systematic passage of steel bougies in connection with the above treatment was begun. The medication was continued until the patient's stomach would no longer tolerate the balsam, when it was omitted, the bougieing and injections being persisted in. Three months from the institution of the treatment the patient remaining abstemious, there was still enough discharge to make him despair as well as seek other advice.

In July, 1888, I was consulted, and examination then showed a slight gleet discharge. Calibre of urethra 36 millimetres. Stricture $3\frac{1}{2}$ inches within the meatus, calibre 34 millimetres. At this time not having a urethroscope with which to make an examination of the urethra, I believe the discharge was caused by the stricture of large calibre present. I advised the passage of solid bougies and injection brou (French formula), hoping in this way to restore the normal condition of the urethra. This treatment was used faithfully for five months. In December, there being no longer any discharge, I stopped passing bougies and discontinued the injection, which had been changed from injection brou, several different formulæ, having been used. I advised that a No. 35 solid bougie be procured and passed once a week for some time.

In August, 1889, I was again consulted for an epididymitis of left testicle, following the passage of the bougie. This attack of epididymitis confined the patient to the house for one week, when the discharge again returned. As soon as the epididymitis had cleared up I examined the urethra with urethral meter, finding it trespassed upon to a little less than one millimetre at site of original stricture. Examination of urine showed presence of a few pus corpuscles and some shreds of mucus. Examination of prostate through rectum was negative. Believing the cause of the trouble to be chronic inflammation of the deep urethra, I used instillations of solution of silver nitrate, varying in strength from 10 to 20 grains to the ounce, using the Gross instrument. In a very short time the discharge disappeared only to reappear after taking a glass or two of beer. In the fall of 1889, a urethroscopic examination showed the cause of the trouble to be chronic urethritis with granular areas in the membranous urethra. Treatment like that I have detailed proved in a short time entirely satisfactory.

The citation of these four cases, I think, is sufficient to support what I have intended to convey by the title of this paper.

In addition to the value of this instrument in the diagnosis and treatment of chronic urethral discharges, I desire to call attention to what, by its use, I believe I have demonstrated to be a cause of failure in obtaining a cure in a certain number of cases of stricture operated upon by divulsion, and which I think is an argument in favor of dilating internal urethrotomy (the operation I strongly advocate where it is feasible), and cannot result from the cutting operation, if properly done. I refer to tabs or teats of mucous membrane which have been separated at the time of the divulsion; and by bougieing, the union of these tabs to the surface from which they were torn has been prevented. In two cases coming under my care recently I have found the following conditions as here shown in the diagrams:

This condition, in my judgment, granting that all of the strictured area has been removed, is quite sufficient to keep up a discharge.



FIG. 3.—Normal Urethra.



FIG. 4.—Teat-like prominence of urethral mucous membrane.



FIG. 5.—Same as 2. Point of prominence showing in the centre.



FIG. 6.—Multiple projections of mucous membrane into the urethra.

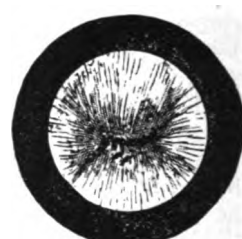


FIG. 7.—Multiple small projections into the urethra. Same as Fig. 6. Tube partly withdrawn.

The routine treatment of cases of chronic urethral discharge is by injection, soluble bougies, the systematic passage of solid bougies, and internally by the administration of stimulating blenorhagics, until the patient's stomach will no longer tolerate them, and with, in many case, little or no effect. It is evident to all that this form of treatment will no doubt modify the condition and will cure a few cases. The advantage offered by the treatment advocated in this paper is, that we are with certainty able to deal with the diseased point or points, it being necessary in only a few to trespass upon the prostatic urethra proper, which is always done in the ordinary routine practice of introducing the bougie into the bladder, thereby exposing the prostate gland to injury, as well as endangering the patient to an attack of epididymitis.

THE general meeting of the German-speaking Cremation societies is to be held this year at Frankfort-on-the-Main, on the 27th inst.

SOME POINTS ON TRACHEOTOMY.¹

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Imperative tracheotomy for foreign bodies or for rescue from impending death from disease, has ever been the dread of the practitioner, hence when Dr. O'Dwyer invented an apparatus for tubing the larynx, supplanting the operation in many cases, his suggestion was received with enthusiasm, and deservedly so; still there are conditions in which the trachea must be opened. For foreign bodies it is the only relief, and in cases of extreme emergency from disease, where the patient may die before the mechanical appliance can be procured. This dread of tracheotomy has arisen from the fact that most authors have invested the operation with great dangers, surrounded it with serious complications, such as unavoidable hæmorrhage, wound of the great vessels at the base of the neck, injury to the adjacent cervical arteries and veins, strangulation during the process, bleeding from the wounded isthmus of the thyroid, wounding the œsophagus by transfixing it and the trachea with a mistaken plunge of the knife, "working in the dark," finding the vertebral column instead of the tracheal tube! It is hard to conceive that such accidents have attended the operation, nevertheless, the student will find frequent reference to such mishaps, and he is warned by authors against them.

Doubtless these complications may occur in efforts to open the trachea below the isthmus. An inexperienced operator follows the advice of the author which he is in the habit of consulting; he encounters a hypertrophied isthmus, to get below which he finds himself at the base of the neck, where the great vessels often cross; a fatal hæmorrhage may occur even from a careful use of the knife. The isthmus may not be enlarged, but an anomalous position of the arteries or veins, or their branches, may be encountered; they are in danger of being wounded.

IS IT A DANGEROUS OPERATION?

The earlier writers and many of the more recent speak of the operation as one of the most hazardous, why? With ordinary anatomical knowledge and average skill it may be made a perfectly safe proceeding, and with scarcely the loss of a spoonful of blood, if the proper location is selected, and after the skin is divided, a blunt instrument takes the place of the knife.

Velpeau, "Operative Surgery," in discussing tracheotomy and the dangers which sometimes attend it, says: "If during the operation venous hæmorrhage should be too abundant and resist the ordinary means, we should not get alarmed

and in our fright abandon the patient, as Ferand did in a similar case." He was speaking of a hæmorrhage which occurred whilst he was attempting to insert a canula.

Trousseau speaks of the dangers of a too "nimble tracheotomy," referring to a careless mode, but when he says, "if the isthmus of the thyroid body presents itself under your bistoury, never hesitate to divide it in the mesial line." This advice, followed in some cases, would lead to results as disastrous as the most "nimble tracheotomy." The treatment of the isthmus, as will be seen farther on, is one of the most important considerations in connection with reaching the trachea. In a case which I saw some years ago with Drs. T. N. Wise and R. Pretlow, of Covington, Ky., the isthmus was so hypertrophied and fixed in its position that we were compelled to ligate on both sides before venturing to divide it; we then had a dry way to the trachea.

Holmes says, "tracheotomy is the most dangerous of all operations for the relief of children."

Gross' remark on tracheotomy, in which he affirms, that, "I know hardly an operation in all surgery that I would not rather undertake than this," has, doubtless, unnerved the arm of many an inexperienced practitioner.

Bryant writes, "tracheotomy is by no means a simple operation." He advises deliberation and refers to cases in which, from the embarrassment of the operator, the innominate and carotid were injured, the œsophagus opened through the trachea; and he has seen both the trachea and œsophagus transfixed and the knife sunk into the vertebral column! Accidents, such as the latter, wounding the œsophagus and vertebra, may attend the use of a broad-bellied knife—the rings being dense, resist division; when they yield, if the operator should not control himself, by mere force or weight the instrument is carried through both walls of the trachea and œsophagus and into the vertebra. The injury to the vessels may occur from, as we shall see, making "the low operation."

Holmes in his surgery, "Principles and Practice," under the term "bronchotomy" describes opening the windpipe in three different places, "between the cricoid and thyroid cartilages, above the thyroid isthmus and below it." In attempting the latter, *i. e.* below the isthmus, he frankly admits that, "I once lost a patient from wound of a branch close to the innominate vein." Many surgeons at the present do not attempt this operation, especially when it is so easy to dispose of the isthmus and thereby prevent the hæmorrhage which may follow its division. In speaking of hæmorrhage passing into the windpipe after the incision, one author advises that "the patient be instantly turned on his face and it will run out again." Usually the blood which

¹ Journal of the Medical College of Ohio.

enters the trachea when an artificial opening is made, is promptly expelled and with great force, coughing, in fact, is rather beneficial; both in cases where the operation is made for disease or for a foreign body, the expulsive efforts are what are required, the more bronchial irritation the better.

Stephen Smith in his work on "Operative Surgery," says, "tracheotomy may be performed above, through or below the thyroid isthmus, the latter place gives more room for the canula and is to be preferred."

Agnew advocates a high incision, beginning with the second ring, and that where the isthmus obstructs the way it must be secured on each side, and the trachea divided between the ligatures.

Frank Hamilton describes a high and a low operation, but prefers the former.

Christopher Heath, like the last author, describes two operations, one above the other below the isthmus.

Victor Horsley, "Manual of Surgery," suggests, that if the isthmus be in the way, it be drawn downward with a blunt hook, a proceeding, by the way, not always possible.

Arthur E. Durham, in Holmes' System of Surgery, while favoring the operation below the isthmus, attributes these fatal accidents to "gross carelessness or utter loss of presence of mind."

... "But in the next sentence he admits that the innominate may cross the trachea higher than in the normal arrangement."

Ashhurst, "Principles and Practice of Surgery," prefers the lower operation, and advises that the isthmus be divided and ligated, yet he says "the chief danger from tracheotomy is from hæmorrhage," and refers to cases "in which the carotid or even the innominate artery has been wounded." Could such accidents have occurred if the operator had confined himself to the upper and middle portion of the trachea?

Erichsen, "Science and Art of Surgery," speaking of the anterior jugular veins, says, "a branch often crosses the line of the tracheotomy wound." He also says, "the carotid arteries are also in close relation to the trachea on each side, being especially in danger at the lower part of the neck. Opposite the episternal notch the windpipe is crossed by the left innominate vein. . . . It will be seen also that the trachea is less covered and may consequently be much more readily reached above than below the isthmus of the thyroid gland." A wise precaution is contained in this last sentence.

It will be seen that no uniformity exists with the surgical authors who have written upon this important operation, an operation which every practitioner, in emergency, may be called upon to perform, there being no surgeon within reach. I feel safe in affirming that it is really one of the

safest, simplest and most easily performed of all the great surgical operations. It is not strange that the inexperienced hesitate when they read of the dangers, of the many fatal accidents which are described by the masters as having occurred. The safety and simplicity of tracheotomy depends on the location selected and the manner of reaching the trachea. The low operation, that is the operation below the isthmus, should not be attempted for two reasons. (1.) The trachea at its lower portion (it takes an oblique direction from above downward and backward) is deep seated, often being two inches from the surface, even in children. (2.) The proximity of the large vessels which cross the trachea at the base of the neck.

WHAT IS THE BEST LOCATION?

Most surgical authors, as we see, speak of and give directions for two operations, one above, the other below the isthmus of the thyroid, when practically there should be but one, or at least but one should be attempted, and that is in the upper and middle portion of the trachea. Bryant has well said, "the nearer the tracheal opening is to the cricoid ring the better." Why talk about operating below the isthmus when a moment's reflection will show that the work will have to be made in the neighborhood of important vessels, a wound of which would be disastrous. In the history of tracheotomy wrecks are numerous in this region, the study of these, "like a meditation upon death," has deterred many. The reader, contemplating the procedure, is warned to be careful not to wound the carotid, the innominate artery or veins. What a blood-curdling thought that of wounding the carotid! Is it any wonder that even the possibility of such an accident should destroy the average appetite for throat surgery, and induce the attendant to trust his patient to a higher power? What are the facts? The carotid and accompanying jugulars are upon lines outside, and the great vessels which cross the trachea are safely below the upper and middle portion of the tube, where alone the operation should be attempted.

Erichsen speaks with great care and warns against wounding the carotid. He refers to one case in which a branch of the innominate was wounded.

An author, *Medico-Chir. Trans.*, 1882-1883, mentions mediastinal emphysema as following a tracheotomy. Holmes reports a case where the vertebral column was struck, but the trachea escaped.

THE THYROID ISTHMUS.

The significance of this structure in connection with tracheotomy should not, as we have suggested, be underestimated. In some instances it is so frail, a mere film, that it may be ignored, again it presents itself as a vascular, immovable

band, while in a minority of cases it is found hypertrophied, very vascular and fixed in its place. Mr. Bryant certainly does not give it sufficient importance when he says, "I have gone through the isthmus of the thyroid and have never had cause to regret it, nay, I am almost tempted to believe that the damages of its division are really theoretical and practically may be disregarded." This may be true when the isthmus is a mere film, or when it is movable, but when it is flush with distended vessels, the inexperienced who cuts it will be fearfully embarrassed. With all due deference to our eminent English author I venture to say, that such advice is dangerous, and that when the operator's knife enters a hypertrophied isthmus and the blood gushes forth the "flesh quake" which may seize him will not be soon forgotten. Is the isthmus of the thyroid gland an element of constant danger? This question has been answered negatively. If it be hypertrophied it can be ligated on either side and divided, if of ordinary size it can be pushed up or down, out of the way of the knife, or if it be a mere film, as it is usually found in children under 5 or 6 years of age, it may be disregarded.

HOW TO OPERATE.

Tracheotomy for disease or for the extraction of a foreign body should be governed by the same rules and principles. A young physician takes up a work to study the anatomy of the trachea; he is gratified to find so few blood-vessels between the skin and that tube, but in the first operation which he attempts, he will be greatly astonished at the hæmorrhage which follows his knife, as he makes incision after incision from the skin to the tube. If the operation be made for croup, diphtheria or inflammatory obstruction of the larynx, or frequently for a foreign body, he will find the superficial vessels enlarged and engorged; as they are divided, the hæmorrhage is so profuse as to be fearfully embarrassing. Can this hæmorrhage be avoided? To a very considerable extent it can. If the skin be transfixed instead of cut from without inward, and a blunt instrument used to move the connective tissue, in which the engorged vessels are found, out of the way, but little hæmorrhage will follow. In this manner Mott exposed the arteries in his great operations for the relief of aneurisms.

HOW TO REACH THE TRACHEA WITH SLIGHT LOSS OF BLOOD.

This is the important question. Take up a fold of the skin, let an assistant hold one side, then with a sharp-pointed knife, curved the better, transfix this skin from below upwards. If possible, make this first incision sufficiently long; it should extend from the episternal notch to and above the cricoid. A liberal incision through the skin gives great ease in reaching the trachea.

This first incision carries the operator into the cellular tissue, and this connective structure may, with a steel director or a blunt instrument, be literally scratched out of the way, until the median muscular division is in view. With the same use of the blunt instrument the muscles may be separated and the rings of the trachea exposed, after disposing of the isthmus, if it be more than a mere film, by pushing it up or down. If, however, it be enlarged or vascular, its treatment has already been indicated. In this "dry dissection," as called by Mott and Hamilton, the fascia is occasionally so unyielding that it may be necessary to incise or nip it slightly, but very slightly. Up to this point a very small amount of blood has been lost. Now, by the continued use of the blunt instrument, the trachea may be exposed fully and freely, so that an opening can be made in it from five-eighths to one inch or even more. With a liberal incision in the skin and a free use of the director the operator will never be embarrassed by "working in a well," as some writer describes it. It should not be forgotten that here, plenty of room is a *sine qua non*.

How to open the trachea? It is not necessary to hold it with a pair of forceps, as suggested by one author, or transfix it with a sharp hook, or seize it between the thumb and finger, but insert the same sharp-pointed, curved bistoury with which the incision through the skin was made, between two of the lower rings and cut upward. The knife steadies the tube sufficiently and the incision can be made while the forceps or hook are being adjusted. It is by using a broad-bellied knife that operators, as heretofore said, in using force, have transfixed the posterior tracheal wall and have passed through the œsophagus into the vertebra. Hardly excusable.

HOW IS THE OPENING TO BE KEPT PATULOUS?

Often a vital question, in diphtheria, croup, œdematous laryngitis and occasionally where foreign bodies are not promptly expelled, it is necessary to keep the opening free. For disease a number of tubes have been invented, and from the fact that all have proved unsatisfactory, many surgeons have suggested modifications or invented new ones. Some years ago an American surgeon, Dr. Brainard, of Chicago, proposed putting a ligature in the trachea on each side of the incision and fastening the ends at the back of the neck. In this way the opening can be kept free and this expedient is in most cases vastly superior to the tube. For an emergency, such as an operator recently encountered, ("Tracheotomy Under Difficulties," H. Harvey Norton, L.R.C.P., M.R.C.S., *British Medical Journal*, May, 1890), Dr. Brainard's plan would have been of great advantage. His patient, "a fishmonger, æt. 30," was approaching collapse, produced by

acute laryngitis, "lips and extremities blue, pupils dilated, conjunctiva insensitive, breathing stridulous, ribs drawn in during inspiration, pulse scarcely perceptible, in fact at the point of death. There was evidently nothing for it but tracheotomy." . . . "But as the man was every moment becoming worse I found I could not wait for the arrival of the tube and was at my wits' end for a substitute, till having examined all the available pipe stems and found nothing suitable I suddenly thought of a quill toothpick." He had to hold it "in position for an hour." This answered until the arrival of a tube which he inserted.

FOR FOREIGN BODIES.

Occasionally a foreign body, such as a grain of corn, becomes so lodged in one of the bronchial tubes that the most violent paroxysms of coughing fail to dislodge it, nor can it be reached by forceps? Under such circumstances what is to be done? How can the way be kept open? The two cases which follow will answer the question.

Case 1.—A grain of corn coughed up after the tracheal opening had been kept patulous for forty-eight hours.

During the last few weeks a child, about 2 years old, was brought to my office, said to have "a grain of corn in its windpipe." It was not suffering, but the father described its paroxysms of coughing during the past night as fearful, that he "could hear the grain of corn passing up and down." The child had had a severe spell of coughing that morning before leaving home, some twenty miles distant; since which he seemed better. The father indulged the hope that the offending substance "had been coughed up and swallowed." This was on Saturday morning; the child was not brought in again until Monday, when the father described the suffering during the forty-eight hours' absence as "very great at times." We inverted the child, attempting in this way to provoke coughing, we evoked one fairly hard spell during which the father was sure he heard some substance passing up and down, I was inclined to agree with him, but as he held the child in his arms my opportunity was not so good as his. I advised the opening of the trachea. This was done without the loss of two teaspoonfuls of blood. A violent fit of coughing occurred, but no appearance of the foreign body. I probed the larynx and the trachea to the bifurcation and the bronchial tubes beyond. The larynx was irritated for its reflex influence in inducing coughing; I was sure the offending substance was not in it, for the little boy's voice was unaffected, this eliminated the larynx. If present, the grain of corn must be below in one of the bronchial tubes, the probe, however, failed to determine its situation. A ligature was passed through each side of the in-

cision and tied behind the neck, the way was thus kept open and the trachea irritated down to the bifurcation, occasionally during the twenty-four hours following, without effect. Another twenty-four hours elapsed, making forty-eight since the operation. The tracheal cavity was again irritated with the probe. After stretching the incision wide open by pulling at the two ligatures, several attacks of violent coughing occurred, when, at last, as I had about decided to keep the way open, if necessary, for another day, a spasmodic expulsive effort threw the grain out with great force; it was picked up from the floor! It had been in the air passage for nine days, and the trachea kept open for the latter forty-eight hours!

Case 2.—Trachea kept open for five days.

A few years ago I visited a boy in consultation with Dr. Barbour, of Falmouth, Ky. The patient was about 6 years old, and was said to have "half of a glass button in his windpipe." When I visited his father's house, he was seemingly comfortable, no cough or dyspnoea, but his parents described his suffering as very great whenever the foreign body would become dislodged; these paroxysms would occur several times in twenty-four hours, and were of a most alarming character. After a considerable effort (he was a boy not disposed to be imposed upon, he emphatically refused to be handled) I inverted him and, with his head down, I shook him over the room several times but could not dislodge the fixed glass button. After again having his sufferings rehearsed, I advised opening the trachea and keeping it open for an indefinite time, for a month, if necessary. I felt confident that his first violent fit of coughing would relieve him. On account of the weight of the glass his nurse was advised to place him on his abdomen when coughing, so as to get the advantage of gravity. On the fifth day it dropped upon the floor during an expulsive effort.

These cases emphasize, 1, the value of Brainard's suggestion. 2. The propriety of keeping the trachea open for an indefinite period.

The trachea, after being opened and kept open, as is often done where tracheotomy is resorted to for disease or obstruction, heals very readily; its ability for repair is remarkable.

The ligatures will often prove most satisfactory after the trachea is opened for diphtheria or croup. In many cases Dr. O'Dwyer's tube answers well, but in others tracheotomy will have to be resorted to. This distinguished surgeon by his invention has made both humanity and the profession his debtor. Dr. Charles Denison, of Denver, Colorado, in a paper read before the section of Laryngology and Otology, American Medical Association, suggests a valuable modification of Dr. O'Dwyer's instrument; it consists essentially in an improvement of the "Gag."

I quote from his paper: "A proper gag. My experience with the gag accompanying the first set sold of Dr. O'Dwyer's tubes, convinced me that a better means of getting and holding open the patient's jaw must be devised. The long handles being hit by the child's shoulder or some other part, thus disengaging the instrument, together with a bitten and poisoned index finger, settled the question for me, and I devised a simple two-armed gag, separated by a ratchet controlled by the thumb and forefinger, which has served very well in many subsequent intubations." For further description and illustration of Dr. Denison's addition to Dr. O'Dwyer's instrument, see JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, June 7, 1890.

RAPID TRACHEOTOMY.

Rapid tracheotomy must occasionally be made both for disease and for foreign body. The physician finds his patient in extremity; for rescue, relief must be given promptly. The following cases show the hazard which attend occasionally foreign bodies in the air passage.

Case 3.—A fragment of nutshell in the larynx.

A messenger came hurriedly for me one holiday morning; he informed me that a boy about 10 years old "had swallowed, the night before, a fragment of a nutshell." Supposing it to be in the œsophagus, from the time which had elapsed, about thirteen hours, I said, "why did he not come with you?" "Oh," he replied, "he can't get his breath." This convinced me that the obstruction was in the air passage. When I arrived at the residence he was lying on a bed in a dark corner of the room, his breathing consisted of gasping and not more than five or six in the minute, color livid, skin cold, pulse scarcely perceptible. We hurried him to a table opposite to a window and with great rapidity I operated; my assistants, Drs. McMechan and James, said that less than a minute was occupied. As soon as the trachea was opened his faint spasmodic gasps stopped, but by efforts at establishing artificial respiration and irritating the interior of the trachea, at last a slight inspiratory effort was made, then another, and another; soon the color began to return to his lips, his eyes opened and promptly respiration was fairly established.

Where was the nutshell? Not below, for the probe that I had so often passed down to the bifurcation, had encountered no hard substance; then, too, such a substance would not have caused such difficulty in breathing; had it been in one of the bronchial tubes, he would have had one lung free. Directing our investigations toward the larynx it was discovered, and with a pair of forceps removed.

The history of the case is singular and interesting. During the previous evening while eating a variety of hickory nuts a portion of the

hull passed into the larynx; it produced some coughing but no difficulty in breathing, the coughing soon subsided and at 8 P.M. he retired and went to sleep, but awoke at 3 A.M., sprang out of bed "struggling for breath." He soon became exhausted and was placed in bed. Physicians were called; one looked at him, at 8 A.M., five hours after he had commenced gasping, and said "he could not operate on a dying patient," gave him some medicine, or rather wrote a prescription, and said he would call again at twelve o'clock!!! This was about 8 A.M. I arrived between 9 and 10 A.M. and found his respiration made up, as heretofore said, of mere gasps.

Why was this boy so comfortable from the time the hull was inhaled, somewhat before 8 P.M. until 3 A.M., more than seven hours? The hull was flat, about the size of the nail of the little finger, it lodged in the larynx, and whilst it maintained an upright position, respiration and vocalization too, as it was below the cords, were not materially interfered with, but when it fell to a horizontal position it obliterated almost entirely the lumen of the cricoid, hence his struggles. It is marvelous that he lived so long

Case 4.—A fragment of oyster shell in the larynx of a child seven months old.

I was called by Dr. Bishop, Jr., of Loveland, twenty-five miles distant, to see a delicate child seven months old, with all the symptoms of a foreign body in the air passage; it was in collapse. Its history, as had been learned by the attending physician, was, "one moment it had been well, the next its breathing was of the most alarming character." It had been left alone for a short time, nothing could be found which it could have put into its mouth, except that some fragments of celery were within its reach, and a small portion, it was supposed, had got into the windpipe. No time was to be lost, the little thing was livid and almost pulseless. The trachea was opened as rapidly as possible, it soon rallied by breathing through the incision. In looking for the embarrassing substance no trace was found below, but the probe encountered a hard substance above the incision and within the cricoid. With a delicate pair of forceps it was removed, and our surprise may be imagined, when we discovered a small fragment of an oyster shell. The family had had oysters for breakfast. The recovery of the little patient was uninterrupted, showing that the operation does not make a severe draught upon vitality. It is to be hoped that, as he grows in years and discretion, he will confine himself to the interior of the bivalve.

CONCLUSIONS.

I beg to state a few propositions:

1. Tracheotomy is our only remedy for foreign

bodies, and in cases of obstruction from disease where O'Dwyer's intubing apparatus can not be obtained, or in cases where intubing is not practicable.

2. The incision should be made by transfixion, and then the connective tissue treated by a blunt instrument or a steel director.

3. Where should the operation be made? In the upper or middle portion of the trachea; the reasons for this selection of location have already been given.

4. When the isthmus is hypertrophied or vascular, ligate it on either side and then cut it in median line between the ligatures.

5. What kind of knife should be used? A sharp, pointed, curved bistoury for both the skin and trachea. As already explained no hæmorrhage follows its use in dividing the skin, and in opening the trachea it steadies the tube and dispenses with the "forceps, hook, or thumb and fingers."

6. How to keep the way open? If a foreign body is not promptly expelled, place a loop of silk thread on either side and tie these ligatures behind the neck. So also in cases of disease where the tube does not act well Brainard's ligatures may be substituted.

ACUTE RHEUMATISM IN CHILDREN.

Read in the Section of Diseases of Children, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY FRANK S. PARSONS, M.D.,

OF BOSTON, MASS.,

LECTURER ON DISEASES OF CHILDREN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, BOSTON.

It is not my intention in this paper to enter into a discussion of all the etiological factors or the theories of blood changes occurring in acute rheumatism; neither can I offer anything especially new in the study of this disease; but I propose to outline the main points of interest which may arise in connection with acute rheumatism as observed in children, contrasted to those observed in adults.

The study of acute rheumatism in children comprises a far wider range of territory, and gives us a more complete conception of its nature, than in the cases of adults. The finely organized and delicate tissues of a child offer a more extended area for the distribution of rheumatic disturbances. Its pathological range is not limited to the fibro-serous structures so uniformly, but may also comprise the mucous membranes and the skin. The statement that acute rheumatism in children is a rare disease is not well founded; indeed, I am inclined to think childhood rather predisposes to it when accompanied with poverty.

Children, and especially those of the lower classes, are continually exposed to damp and

cold, which offers to them a factor in the causation of rheumatism, against which the adult is more careful to protect himself. Then, too, it must be remembered that the same causes act on the parents of these unfortunates, developing an hereditary tendency, and rheumatism is one of the most common of diseases to be handed down from generation to generation.

It is often the case to find very slight manifestations of the articular affection in the child, or none at all, but instead an inflammatory process going on in some sero-fibrous structure, as the endocardium, for example, that can be traced to no appreciable cause except exposure to cold and the consequent slight affection of some muscle, to indicate that the patient has developed a rheumatic diathesis; yet in these very cases one may find the direst lesions of the heart valves or pericardium.

A child may contract acute rheumatism at any age, but the greatest liability is between the fifth year and puberty. Cases occurring during this term are pretty evenly distributed. Many are recorded much earlier in life. Henoch cites one at ten months, Stäger one at four weeks. The earliest I have attended was one in a girl eighteen months old, where the inflammation of the knee joint was well marked; in this case erythema appeared.

Sex, contrary to the predisposition in adults, does not seem to have any significant etiological importance in childhood; there is a pretty even distribution between girls and boys. It is doubtful if there is any special type of complexion or temperament predisposing to an arthritic diathesis.

Acute rheumatism in children may be primary or secondary. It is secondary only to scarlatina or diphtheria. What the pathological processes are that influence the exciting of rheumatic tendency following these diseases, is uncertain; but it is not altogether uncommon to find joint affections attending scarlatina, and that these affections are not to be distinguished from acute rheumatism, inasmuch as they are liable to be complicated with endocarditis or pericarditis.

Exposure to wet and cold is generally considered the most prominent of exciting causes; and when taking into account the formation of lactic acid in muscular exercise and the naturally active habits of a child, it may become a prime factor in the production of rheumatism in them, especially when they are exposed to chilling influences after bodily exertion.

Dr. Haig-Brown, in the *British Medical Journal*, September, 1889, points out the similarity of the exciting causes of rheumatism and follicular tonsillitis. One is two extremes of weather, viz.: excessive damp and cold, with fog and northeast winds, and excessive hot and dry, with the humidity of the atmosphere at about 80, and of

course no fog; the other is the septic influence of poor drainage.

The post-mortem changes to be found in children with rheumatism differ greatly, according to the severity of the various local affections. The joints are oftentimes so slightly damaged as not to give those marked pathological changes so uniformly present in the adult. The synovial membranes may, however, be hyperæmic, and there is more or less effusion into the joint cavities and surrounding tissues. This effusion may consist of synovia, or serum containing blood corpuscles or leucocytes. Occasionally minute hæmorrhages in the more vascular portions occur. Rarely is there suppuration or ulceration of the cartilages. In children, commonly, one finds near the joint or tendons fibrous nodules, a condition similar to that found on the cardiac valves after rheumatic endocarditis.

Erythema may be manifested in the skin about the swollen joint and elsewhere, and there are often evidences of acute tonsillitis in the throat.

It has been my experience to observe in children a number of cases where the inflammatory process attacked the sheath of the muscle in preference to the fibrous structure of the joint. In these cases the extent of inflammation varied greatly; for the most part it would be confined to a muscle or group of muscles, and often would be accompanied with serious heart lesions. One recent case is fresh in my mind, that of a boy 8 years old. On exposure to wet and a chilling east wind he contracted acute rheumatism in the muscles of the calf of his left leg. It was swollen, hot and painful in the muscular portion, but not in the joint. In two days the inflammatory process had extended to every muscle in the body that was appreciable to the touch, and had invaded the pericardium. This boy died on the eighth day from date of exposure of acute pericarditis, and there was a rise of temperature after death for some hours.

The chief interest and danger in acute rheumatism of children lies in the extension of the inflammation to the heart. Endocarditis, pericarditis, and more rarely myocarditis, are pathological conditions generally found in autopsies on children dying from this disease; in fact they are principally the prime causes of death, as simple arthritic or muscular rheumatism tends to recovery.

It is out of the province of this paper to enter into a discussion of the morbid anatomy of heart disease, but it is generally found that in endocarditis it is the mitral valve that is the most frequently attacked and occasions permanent impairment of the cardiac functions, while lesions of the aortic valves are more liable to produce sudden death. Occasionally we may find an inflamed pleura, and even a pneumonia, associated with and dependent upon an attack of rheumatism, and instances of meningitis are not rare.

The symptomatology of acute rheumatism in the child varies according to the extent and severity of the inflammatory processes and the structures which they invade. Compared with this disease in adults there are scarcely any of the more prominent symptoms to any great extent, and those we are accustomed to credit as complications or sequelæ in them appear in the child as chief or initial manifestations. Thus, arthritis in children is at its minimum, while endocarditis or pericarditis is at its maximum of intensity; indeed, the latter may appear before any more characteristic symptom of rheumatism is observed. Then, too, a tonsillitis, pleurisy, or possibly chorea may appear as the more prominent symptom early in the attack.

Generally the commencement of acute idiopathic rheumatism is abrupt. There is a distinct recollection of the date of exposure, and this may be followed by some soreness and stiffness in the muscles or joints affected. There is redness, heat and swelling in the locality of the inflammation, and the affected limb is very painful on moving. As the inflammatory process abates in one joint or group of muscles, it reappears in some other, unless the morbid principle has in the meanwhile been eliminated from the system. Ordinarily the joint symptoms continue two or three days before attacking a second articulation.

The temperature of acute rheumatism in children does not run high—seldom more than 102–103. There are cases on record of hyperpyrexia in this disease, but they are of rare occurrence. This is perhaps singular, because it is contrary to the general run of fevers in childhood. The febrile movement does not last more than two or three days.

Sweating in rheumatism is slight in children, as compared with the profuse acid perspiration of adults, and in consequence is not so sour-smelling.

It is in childhood that heart disease plays the most prominent and important part in acute rheumatism. Endocarditis is almost sure to follow joint affections, and often it may be the sole expression of the rheumatic state. It is generally confined to the left side of the heart, the mitral valve being the most frequently attacked, although it is common to find both aortic and mitral involved in the inflammatory process. It occurs in a relative proportion of 72 to 46 per cent., as compared with endocarditis of adults in acute rheumatism.

The endocarditis, as a rule, is of a subacute variety, and is prone to assume a relapsing character. The first or early sign is a soft, blowing murmur, indicative of a primary attack. This may disappear in a few weeks, but oftener increases in distinctness and becomes a loud, harsh murmur, heard, if the mitral valve be affected, loudest at the apex. Another cardiac sign in-

dicative of the development of endocarditis is the reduplication of the second sound, audible at the apex only. This is to be distinguished from a similar reduplication heard at the base, sometimes as a result of Bright's disease, sometimes as the consequence of pulmonary obstruction. Occasionally this reduplication is accompanied by a diastolic murmur indicating mitral stenosis, and is a certain evidence of endocarditis.

Pericarditis is more common in children, during an attack of rheumatism, than it is in adults, and nearly as much so as endocarditis, to which it bears resemblance in its manner of onset and continuance. It is regarded by some as less liable to occur in a primary attack of acute rheumatism in childhood. It is generally subacute, and is to be distinguished from endocarditis mainly by the friction sounds, the increased præcordial dulness, and rapid respiration and pulse rate.

Pleurisy is not a rare manifestation of acute rheumatism, is usually found on the left side, and may be secondary to pericarditis; but when it occurs alone, followed by arthritis, it is to be considered as a direct expression of the rheumatic diathesis.

Peritonitis has been occasionally observed and meningitis found existing in a certain proportion of rheumatic cases.

That the same causes act to produce tonsillitis as acute rheumatism, has been mentioned; hence, taking this view of it, there is little wonder that tonsillitis occurs during the course of rheumatism, or may usher in its initial stage. Rheumatic sore throat has long been recognized as a prominent symptom in children; indeed, it is not uncommon to see a child come into the dispensary with enlargement of the tonsils, having previously had attacks of rheumatism. Statistics show that tonsillitis occurs as a primary symptom of the rheumatic diathesis in 24 per cent. of cases.

Bronchitis and pneumonia may occur as symptoms of the rheumatic state, but more rare.

Erythema in some form is a pretty constant concomitant of acute rheumatism in children. Since commencing this paper I have seen a case that, save for the inflamed wrist joint and the mild fever, might easily have been taken for some exanthematous disease.

In a certain number of cases a neurotic tendency is manifested; chorea, with or without emotional excitability, is the form predominant. The preponderance of cases is in girls in a ratio of three to one, as compared with boys.

When thrombosis or embolism occurs, as they rarely do in connection with heart disease, a serious source of danger is manifested.

Delirium supervenes in a certain number of cases, probably due to the action of rheumatic virus on the nerve centres.

Anæmia is a common accompaniment of the rheumatic diathesis in children, and is especially

well marked in cases where there is serious heart trouble.

There is one condition which is more prone to occur in children than adults, namely the development of fibrous nodules in connection with this disease. These nodules are found in the neighborhood of joints and tendons, are not painful, but may assume the size of an almond, they appear in successive crops or singly.

Regarding the diagnosis of acute rheumatism in children there is little to say; most cases are self-evident. There may be room for confounding it with scrofulous arthritis, but the latter would be more chronic, less indurating and symmetrical about the joint.

When endocarditis arises in the child, there is strong presumption that it is rheumatic in origin. From fifty to eighty per cent. are said to be traceable to rheumatism, and if it be accompanied by a rheumatic train of symptoms, as chorea, fibrous nodules, erythema or joint affection, the diagnosis is certain. The duration of acute rheumatism in children is shorter than in adults; two or three weeks usually suffices for the primary attack, and often it is much shorter.

Since the introduction of salicylic acid in the treatment of acute rheumatism the profession have held a most powerful sheet anchor to throw to windward in times of need; now and then there are failures of course, but in the main salicylic acid, and its derivatives, may almost be called a specific in this disease, and it is no less efficacious in children than in adults. It mitigates the fever, alleviates the pain, and, withal, renders the child less liable to heart complications. The most efficacious preparation is the salicylate of soda, and regulated in the proper dosage does no more harm than any of the other preparations of salicylic acid, in fact it is more soluble, more palatable and quicker absorbed by the system. There are some drawbacks to be sure; it may cause vertigo, deafness, ringing in the ears, and prostration, also it may cause epistaxis, but such effects of the drug are less liable to occur in children than in adults.

Salicin is preferred by some, but it takes a larger dose to perform the same work and obtain the same results than the salicylate of soda.

The general experience with salol is, that it is a much inferior preparation to any of the others just mentioned; it is oftentimes beneficial, however, in mild cases.

It is a good plan to combine an alkali, like the bicarbonate of soda with the salicylate of soda. The salts of potash are too depressing to be as safe as those of soda, and depressing drugs are to be avoided in rheumatism.

Absolute rest in bed is a prime requisite in the treatment of acute rheumatism in children, and this should be combined with warmth. When the limbs are swollen and painful, I generally di-

rect a strong, hot bicarbonate of soda solution to be prepared, into which flannels are dipped, and wrung, and quickly applied to the affected limb or joint. This tends to sooth the pain, and often times the little sufferer obtains a few hours of refreshing sleep after a night of pain and restlessness.

If heart symptoms arise, the salicylates should be stopped and the alkali increased, say from ten to fifteen grains of bicarbonate of soda every four hours, to a child of five years. Warm poultices may be applied to the præcordia in endocarditis, but blistering should be avoided. On the other hand, in pericarditis local depletion by two or three leeches is advisable, and blisters are warrantable after the effusion has supervened; care should be taken to stop the bleeding occasioned by the leeches.

When the heart's action becomes turbulent and rapid, the tincture of digitalis may be employed in three to five drop doses every four hours according to age, but it should be cautiously administered in pericarditis as it is a dangerous remedy in cases of extreme effusion. Strophanthus may be employed in its place if preferred.

Stimulents are necessary when heart failure is imminent and should be pushed to a point of materially relieving the exhausted vital powers. Alcohol and nitro-glycerine may be usefully employed for this purpose.

At times some form of opium is indicated for the treatment of the pain and restlessness of acute rheumatism in children, but only such doses should be used as will produce quiet, and under no consideration should it be pushed to a point of narcotism.

Dr. Goodwin, in the *New York Medical Journal*, 1888, called the attention of the profession to his use of the fluid extract of cascara sagrada in ten-drop doses three times a day as a laxative, also claiming a beneficial action on rheumatism in his own person and others.

Statistics do not seem to favor antipyrin in place of the salicylates, in the treatment of rheumatism. While it may relieve the pain and reduce the fever, yet it is not permanent in its action and, moreover, is a depressing agent on the heart.

Acetanilide bears a better reputation in the treatment of febrile movements in children than does antipyrin, and I think rheumatism is no exception to this rule.

Phenacetine is credited by many as being a safer and better drug to use than either of the previous antipyretics, and especially it has more permanent results.

Dr. Grinevitski, of Russia, recommends the hypodermic injection of osmic acid in a one per cent. solution in muscular rheumatism. Eight to twenty minims are thrown directly into the muscle substance. There is a burning sensation

for a time which disappears and, he claims, the rheumatic pains are soon relieved, and from two to three injections effect a cure. I have never employed this agent but once, and that in an adult, the result was a certain amount of relief, but a number of injections did not effect a cure. As far as I can find the experience of others is similar.

When anæmia exists, arsenic and iron should be administered during convalescence.

Other symptoms rapidly disappear under the general treatment of rheumatism. The erythema needs no treatment, and the tonsillitis yields readily to the salicylates.

Acute rheumatism does not call for the restricted diet usually prescribed. During the pyrexia it is well to keep the patient on a milk and broth diet. In cases of extreme anæmia, meat juice, or even raw meat pulp, may be given with advantage as blood restorers. The self-digesting foods and peptonized milk are also most useful.

MEDICAL PROGRESS.

TREATMENT OF PURULENT PLEURISY OF INJECTIONS.—M. FERNET reports to the *Soc. Méd. des Hôpitaux* (*Jour. de Méd.*, May, 1890), his success in the treatment of a case of pleurisy involving principally the diaphragm. A puncture was made and 200 grams of pus removed, after which 15 grams of Van Sweeten's liquid was injected. This operation was repeated each three or four days and at the end of ten days the symptoms had improved, and the fever disappeared. At the eighth *séance*, more than 200 grams of pus was removed, and the failure of the injections having been demonstrated recourse was had to naphthol, that it was thought, owing to its unsolubility, might remain longer in the cavity. The solution of M. Bouchard, consisting of naphthol β 5 grams, alcohol 33 grams and water 62 grams was used. Fifteen to twenty grams of this solution was thrown into the cavity with each injection. After five treatments the pus disappeared and the patient was convalescent. From the results of this case the writer thinks that the method of injection is applicable to certain pleurisy, whether infectious or not, as by this means the pus is evacuated and the center of the disease is reached. That it is especially applicable to circumscribed inflammations and those not readily reached by thorocotomy as mediastinal, interlobular and diaphragmatic pleurisy.

ANOMALIES OF THE SEXUAL FUNCTION.—M. MAGNAN presented to the Société de Médecine Légale (*Progrès Médical*, May, 1890), the history of two cases showing the variety of sexual per-

version known as "exhibitionists," or those having a tendency to expose the genital organs in public or to individuals, usually females, whom they meet in unfrequented places.

One of the two cases shows marked hereditary defect, and they both present typical degeneracy.

Magnan classes these cases with the kleptomaniacs, pyromaniacs, and the suicidal and homicidal insane. The relation of imperative conceptions to the abnormal impulses of these degenerate beings is pointed out.

SUSPENSION IN LOCOMOTOR ATAXIA.—ROSENBAUM presented the results of some 2,500 suspensions in eighty-five cases, to the Berlin Society for Internal Medicine (*Internat. Klin. Rundsch.*, May, 1890). The suspensions were made with Sayre's apparatus. The author recommends that the arm pieces be shortened at first, but as the patient is accustomed to the treatment more weight should be brought directly upon the head. The suspension should rarely exceed three minutes, and not oftener than three times each week. Patients with normal weight bore the treatment best and it is easier to accustom them to it.

Twenty-five of the cases were distinctly improved, in five no change was noted, while in nine the results were doubtful because of the brief time which they were under observation. In the patients benefited was noted an improvement in sleep, appetite increased and heavier weight. The most constant improvement was in Romberg's symptom and in the ataxia. After ten or twenty treatments some patients could lay aside their canes and take long walks. In fifteen the bladder troubles improved, though relapses occurred soon in most cases. The rectal reflexes were only occasionally improved, and in but four cases were the sexual troubles benefited. The gastric crises and vomiting were improved in many cases. That the method is not free from danger is attested by occasional deaths; and it should not be resorted to in cases presenting lung troubles, heart disease or atheroma.

In the discussion P. Gutmann stated that he had employed suspension in twenty-five cases, ten of whom were ataxic, of these five were improved. A case of myelitis was benefited, and four cases of sciatica were relieved to some extent of pain, but no permanent good was obtained.

Prof. Leyden said that he did not regard suspension as of practical or theoretical importance. Like the nerve stretching that had preceded, nothing was to be expected from such a mechanical process upon the complicated conditions in ataxia. The method was not free from danger; accidents had happened but these could be diminished by care, though this very care operated against a successful suspension, and lessened the stretching. The method might be useful in overcoming some of the symptoms, such as pain and

impotence, though the effect upon the mind was not to be disregarded.

Dr. Remak said that in a disease as changeable as tabes many methods would be used and good results obtained. If the changes are not too deep, any treatment will improve them, but occasional cases will grow worse with any or all treatment. The improvement in particular symptoms is not of much importance, as the mental condition plays such a considerable part in these changes.

Prof. Mendel said that all observers were agreed that the knee phenomenon and pupil reflexes were not altered by suspension, but that certain symptoms were permanently improved, which was not the case with other methods; baths, electricity, etc. The industry with which patients pursue for months this treatment speaks for its benefit.

THE MALARIAL INFECTION.—DR. F. PLEHN (*Arch. f. Hyg.*, x, i, p. 78, 1890), describes the results of the examination of the blood of three patients affected with malarial fever contracted in Germany. In one case (quotidian) he was able to demonstrate all the different stages in the development of the plasmodium malaria, with the exception of the so-called sickle and spindle forms. The blood was observed in a warm cell, and the plasmodium was seen in active movement, when treated with quinine they immediately vanished. In a case of tertian ague the characteristic plasmodium was seen but in greatly diminished numbers. In a case of quartan ague they could not be demonstrated.

In demonstrating the plasmodium the following method was pursued: The blood was received upon a cover glass and spread out, as thin as possible, and then fixed by allowing it to remain 10 minutes in absolute alcohol. The stain is made by diluting a concentrated watery solution of methyl-blue, one-half with water, and adding one-half its volume of a 1/2 per cent eosin solution (in 60 per cent alcohol). Before using the solution it should be filtered. The time occupied in staining is from a few minutes to twenty-four hours. The red blood corpuscles and the protoplasm of the white appear rose colored, while the nuclei of the white corpuscles are stained a dark blue, and the malarial parasite a light blue.

THE ETIOLOGY OF INTERMITTENT FEVER.—DR. RICH. POLTAUF (*Wien Klin. Wchnschr.*, iii, 2, 3, 1890), gives a long account of the literature regarding the malarial germ of Laveran. He states the results of his own observations which agree with those of Celli and Giarueri. He holds that the etiological relation of the plasmodium cannot be denied, and that it offers an explanation of the dark pigment found in intermittent fevers; the germs converting the hæmoglobin of the blood into melanin.

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SATURDAY, JULY 12, 1890.

THE CLINICAL SIGNIFICANCE OF THE DIAZO-
REACTION (EHRlich's TYPHOID FEVER
TEST).

When this test was first published it attracted universal attention and soon the journals were filled with reports. After a time it was found that it was by no means diagnostic of typhoid fever, and for a time, the popularity of the test waned. Later it has been shown that it has considerable value in a clinical way, not only in diagnosis but in prognosis. DR. L. RÜTIMEYER (*Correspondenz-Blatt für Schweizer Aerzte*, May 15, 1890) gives a careful study of the literature up to date, and adds the result of his own observations, upon 260 patients; the total number of tests amounting to 2,750. He used the solution recommended by EHRlich: a concentrated watery solution of sulfonilic acid, and a $\frac{1}{2}$ of 1 per cent. solution of sodium nitrite. From these two solutions the reagent is each time freshly prepared, by adding to 200 cc. of the sulfonilic acid solution 10 cc. of pure hydrochloric acid and 6 cc. of the sodium nitrite solution. It is better to prepare the solutions freshly as they keep but a few days in summer, while in cold weather they will remain active for some months.

The statements of PETRI, that the reaction is occasionally obtained in normal urine, and of PENZOLDT that it takes place in diabetic urine, is met by the statement of Ehrlich that these observers used solutions of too great strength. SPIETHOFF has experimentally confirmed this view and has obtained with glucose a pseudo-reaction, but this does not give the green precipi-

tate, characteristic of the true reaction. These results substantially agree with those of Rüttimeyer, who failed to get the reaction in normal urine and in a number of diseases; such as hysteria (5 cases), myelitis (2), hepatitis (2), diabetes (1), cystitis (7), pyelo-nephritis (1), ovarian cyst (3), and the most important from a diagnostic standpoint, 9 cases of abdominal catarrh. These observations confirm Ehrlich's view that the test draws a sharp line between acute gastro-abdominal catarrh and typhus, even when the former is accompanied by fever.

In nine cases of malignant peritonitis the reaction was obtained in eight; only one examination was made in the case in which it failed.

In ten cases of pneumonia a reaction was obtained in five. The author was not able to confirm the views of Ehrlich that the reaction was rarely obtained in pneumonia, and when it appeared it usually meant the presence of complications. FISCHER found a reaction in 7 cases out of 48, and in each one complications appeared at the same time. The appearance of the reaction was regarded as a *signum mali ominis*, which is confirmed by BRECHT, who found that 50 per cent. of cases with reaction died.

The reaction was found in 240 observations made upon 14 fatal cases of phthisis, in 186 instances, or 77 per cent. All of the fourteen cases presented the reaction. Nine phthisical patients were discharged improved, and of the 100 examinations made in these cases only 21 per cent. gave the reaction. Fifteen patients were discharged much improved and are now able to be at work; of the 202 tests made upon these only 18, or 9 per cent., were found to have the reaction. Upon these figures he bases his conclusion that in phthisis (1) a constant failure in the reaction means a light form of the disease, (2) its occasional presence is of no clinical significance, while (3) a constant reaction of a marked kind means an unfavorable prognosis, and an early fatal ending.

The observations upon 87 cases of typhoid lead to the following conclusions. (1) The diazo-reaction is of great importance in differentiating typhoid fever, roseola, splenic tumor, (malarial fevers?) and acute abdominal catarrh accompanied by fever. (2) In cases of suspected typhoid if the reaction is present we probably have to do with that condition; if it is absent during the first and second week we have a very mild case

or some other disease. (3) The amount of reaction does not depend on the febrile process. (4) Disappearance of the reaction in the second and third week ordinarily means an early convalescence or a light course of the disease. (5) Strong and persistent reaction is of no value in determining the probable ending. (6) A recurrence of the disease again shows the reaction even when it has disappeared.

Accompanying this article is an interesting table giving the observations as made from day to day and week to week. A glance at this table shows the relative frequency of the reaction in the different degrees and stages of typhus.

THE ALCOHOLIC QUESTION AND THE INEBRIATE.

It is a curious fact that while the American physician has contributed very little towards the solution of the question of alcohol as a food and medicine, his studies of the inebriate and different methods of treatment are far in advance, and largely quoted by all European authorities. Until recently the literature of this subject has received but little attention in the American Medical Association. Possibly because the intense agitation in lay circles may have covered up the medical interest and strengthened the impression that the subject was entirely a moral one. In the British Medical Association for over a dozen years, numerous papers have been read on the different phases of the alcoholic question, and committees appointed to consider them. One, a Committee on Legislation for Habitual Drunkards, has been continued for years, and has made some excellent reports. Another committee has been very prominent, called a Committee on the Control and Cure of Habitual Drunkards. In France the question of alcohol has brought out several very important studies which have been read before the Academy of Medicine and other societies, and finally have been embodied in several volumes, which practically comprise the best literature on the subject to-day. In the German medical societies the same subject has been discussed very freely during the last five years, and two large volumes have appeared, with many brochures, as the outcome of these discussions. In both England and France medical temperance societies have been formed, the central object of which seems to be to educate the laity concern-

ing the use of alcohol. In 1870 a small society was formed in this country for the study and cure of inebriety. In 1884 a similar society was formed in England; in 1878 two other societies were organized in Germany and Austria. The object of these societies is a thorough scientific study of alcohol and the inebriate. While their special work has not attracted much attention, the rapidly increasing number of papers relating to this subject directly or indirectly, which appear in the programmes of medical society meetings, especially in Europe, show that this subject is going to occupy a large field in the medical science of the future.

Irrespective of all theories and personal opinions, is a practical view of this subject becoming more prominent every year. It is clearly evident that the profession must decide the disputed questions that are growing out of the increasing agitation of the use and abuse of alcohol all over the country. In Europe, where the subject receives but little attention among the common people, the medical interest in it increases very rapidly. It is the reverse in this country, the agitation and interest of the masses has not extended to the medical profession to any great extent. Yet it must come; every year the application of theories and moral and legal remedies demand from the medical profession recognition or endorsement.

Beyond the question of the use of alcohol as a medicinal agent, opens a vast field of social science, where the problems concerning the manufacture and sale of alcohol, and the control and treatment of the victims demand of the profession its best skill and judgment. Within a few years a new class of questions have been submitted to the profession, bearing on the responsibility and mental condition of persons who use alcohol to excess and commit crime, and whose conduct and acts raise doubts as to their mental soundness. Thus the question of alcohol and the inebriate has come to be a distinct medical topic, which cannot be put aside or ignored.

At the Nashville meeting DR. N. S. DAVIS, in his Address on Medicine, gave a very clear outline view of some recent conclusions of the value of alcohol as a food and medicine. The tone and spirit of his review of these late deductions, will serve as an admirable model for other studies in this field.

At the same meeting, in the Section on Neurology and Medical Jurisprudence, eight papers, including the President's Address, were read, devoted to questions of jurisprudence relating to the inebriate. In 1888 two papers were read on this subject before the same Section at the Cincinnati meeting. The next year, at Newport, three papers were presented, indicating how rapidly this subject is coming into prominence.

Dr. Davis' review of alcohol, and the papers read before the Section of Jurisprudence, show that the Association has recognized the demand of public opinion for more accurate scientific knowledge of alcohol and its effects.

To the American physician this subject has a peculiar special interest, for the reason that it occupies so large a share of current popular opinion, and is growing to be one of the great topics of the day. The more this subject is agitated, the more urgent the appeal to medical men for counsel and advice. There is no more important realm for the physician to-day, than the study of alcohol and the inebriate; a study that shall be above all theories and prejudices, and shall aim to find the exact facts and their rational conclusions. While it is a source of pleasure to record the fact, that American physicians have made greater progress in the study of the inebriate and his treatment, still the whole subject has been scarcely touched. The question of alcohol and its action in health and disease is almost an "undiscovered country," and notwithstanding all that is written it is evident that the current opinions and theories of to-day will undergo great changes in the near future.

To medical men who are connected with large laboratories a grand field for original work is open in experiments on the action of alcohol, not only to confirm results which have been previously reached but to discover new facts and conditions relating to its action. The general practitioner has also a grand field for original observation, in both city and country, in the study of the conditions which favor the development and growth of the inebriate and the natural history and progress of the drink impulse, also the possibility of cure and prevention.

The growing magnitude of this subject, and the intense personal interests which come out of it in every community, is an additional important reason why the physician should make this a special study, and thus teach public opinion instead of being taught by it.

NITROGLYCERINE IN GAS ASPHYXIA.

Dr. C. W. Goss, of Lancaster, Ohio, writes to the *New York Medical Journal* an interesting account of a case of gas asphyxiation treated by means of nitroglycerine, hypodermatically applied. A plumber, forty years old, was employed to tap a gas main in an unventilated cellar, when the pipe was suddenly broken off. Before the defect could be repaired, or the workman could get out of the cellar, he was completely overcome by the escaping gas. When the physician reached the patient, he was found cyanotic, with very shallow and spasmodic respiration; he was pulseless at wrist, the extremities were cold, and a state of profound unconsciousness existed. Hypodermics of nitroglycerine, in one one-hundredth grain doses, were given every ten minutes. Within half a minute after the first injection, the radial pulse began to declare itself, and thence grew steadily stronger, while at the end of fifty minutes consciousness was regained, and the patient said he felt quite well, with the exception of a numbness in the extremities. From this time on he grew better, and left for his home at the end of three hours. Artificial respiration was not employed in this case, but it was observed that as the volume of the pulse returned, the embarrassment of breathing was diminished; so that if this case can be taken as a guide, the prime indication will be held to be to establish the equilibrium of the heart and to let the respiration take care of itself. In the same journal, may be found the abstract of a case of overdosage with nitroglycerine, where a person, by mistake, took two drachms of a 1 per cent. solution of the drug: this was followed by recovery, under medical treatment, but for a time the condition of the patient was suggestive of a fatal termination. The symptoms of this poisonous dose were a loss of consciousness, not complete, cold extremities, pallor, dyspnoea, and nausea. Some slight exhilaration was experienced at first but the pulse remained strong and regular, beating 80 to the minute. The distress in the gastric region was relieved by the emetic effect produced by a dose of mustard administered in hot coffee. When the patient returned to full consciousness, she informed her physician that she had been only partially cognizant of what had taken place, but was able to remember the facts of the dyspnoea and of the stomach malaise.

There are now on record three or four other cases of poisoning by illuminatory or coal gas in which nitroglycerine has been used, as one of the parts of the treatment, and recovery has been the result or sequel in every case. In these cases, the hypodermatic use of the drug has been most promptly followed by a manifest improvement in the condition of the patients; the dose has not been repeated in every case at so short intervals, ten minutes, as in this case of Dr. Goss. It may hereafter be determined that a good recovery may be obtained at intervals of half-hour to hour, according to the pulse reaction. It may also be determined that, as is suggested by Dr. Goss, the only treatment that is needed is that by nitroglycerine, and that the battery, or the injection of stimulants, or the practice of artificial respiration may not be called for. It has been assumed that the carbon monoxide, or whatever other ingredient it may be in the olefiant gas that acts as the poison, did its harm as a suffocant, rather than as a heart-depressant, whereas the reverse is likely to be discovered to be the fact, if the observations recently made as to the effects of nitroglycerine shall be confirmed.

EDITORIAL NOTES.

THE HYGIENE OF INFANCY.—The Paris Academy of Medicine has voted to offer a prize of 1,000 francs for the best essay on the hygiene of infancy. It is open to all comers and will be awarded in March, 1891.

GOLD AND SILVER TESTIMONIALS TO SURGEON PARKE.—No medical hero has, in recent times, been better received in London than has Surgeon Parke of the Stanley expedition, and yet withal he is as modest as a young boy. At one of the London banquets, his reception was so overpowering to him that he could not find his voice, so that the master of the feast, in mercy, called upon one of his table companions to tide over the trying moment by the singing of a song. The council of the British Medical Association has voted to confer upon Mr. Parke the gold medal of that Association, the highest unofficial recognition of heroism and fidelity that is known to the English profession. The proprietors of the *Lancet*, not to be outdone, have had prepared a grand silver salver, weighing two hundred ounces, to commemorate for several generations, at least,

the high esteem of the medical "Thunderer" for this young surgeon. Meanwhile the Government is being inquired of on every hand why something official has not been done worthy of the hour and hero.

NEW AND NOVEL WINTER RESORT IN NORTH AFRICA.—Biskra, in Algeria, is the latest novelty in the way of a health resort in winter. It is on the edge of the great desert Sahara, and only a short time ago was an unpromising barren waste. But it has been "reclaimed" by means of artesian wells, has become a veritable garden spot growing date-palm trees by the hundred thousand, and can be approached by a railway, a little less than 200 miles in length, running directly there from Phillipeville, on the Mediterranean coast. It has thermal waters, brought up some 2,500 feet by the artesian tubes, and may prove a very acceptable place of resort to those who desire a warm, dry climate after the season is over at Vichy, Baden, Aix-les-Bains and the like. A very extensive establishment has grown up here in connection with the hotel and bathing-houses and casino; an avenue of palm trees will connect the hotel with Beni-Mora, a small oasis, a few miles distant, whose borders are constantly being extended by the revivifying influences of the subterranean waters that have been brought up by the artesian method. This is probably the first attempt, in modern times, to construct a health resort in the Saharan desert. We shall probably hear more of it.

DEATH FROM TIGHT LACING.—A death from tight lacing is briefly reported in the *Lancet*, for June 14, in the person of an actress of one of the Berlin theatres. This young woman retired to bed as usual one night, after taking part in the performance, apparently in good health, but she was found dead in her bed in the morning. She practiced tight lacing to an extreme degree, and her premature demise was undoubtedly referable to a cardiac syncope brought on by that injurious habit.

DR. M. D. EWELL, of Chicago, has recently been appointed Lecturer on Medical Jurisprudence at the University of Michigan.

THE honorary degree of LL.D. has been conferred by Lafayette College on Dr. Dr. Ezra M. Hunt, of Trenton, N. J., and by Yale University on Dr. Francis Delafield, of New York.

HOW DIPHTHERIA IS SPREAD BY CORPSES.—

In March, 1890, two corpses, woman and child of same family, dead of throat disease, certified by attending physician to be not "dangerous to the public health," were conveyed from Montmorency county to Lapeer county, Michigan, where, just one week from the day the coffins were opened and the remains viewed, a person who was thus exposed came down with diphtheria. Many others would probably have been exposed except for the action of the local health officer, Dr. C. A. Wisner, who, suspecting that the cause of the deaths was diphtheria, warned the neighbors and forbade the opening of the coffins at the funeral. He promptly isolated the first case that occurred, and no epidemic resulted. This is quite different from the result of a similar occurrence at Zanesville, Ohio, last spring, where many deaths resulted from exposure to a corpse brought from Chicago. It shows the importance of notice to the local health officer of the arrival of every corpse, so that he may take every precaution which may be necessary.

THE CENTRAL NEW YORK MEDICAL ASSOCIATION ON CORONERS.—At a meeting of this society, held a short time ago in Rochester, the following resolutions were adopted:

WHEREAS, It is part of the duties of a coroner to view all dangerously wounded persons and bodies found dead, to determine when, where, how, and in what manner such persons were wounded or came to their death, and to cause inquests to be held if in his opinion a crime has been attempted; and

WHEREAS, Such duties presuppose not only a knowledge of law and of legal processes, but also such a knowledge of anatomy, physiology, pathology, toxicology, and other allied sciences, as to qualify the coroner to determine between natural and criminal conditions; and

WHEREAS, The office of coroner may be, and often is, held by men without legal or scientific qualifications; therefore,

Resolved, That in the judgment of the Central New York Medical Society the laws relating to the office of coroner ought to be so changed as to render only competent men eligible to office, to the end that society may be better protected from attempted crime; and

Resolved, That the State Board of Charities, the Medical Society of the State of New York, and other societies interested in promoting the common weal, be requested to coöperate in the effort to accomplish the enactment of new laws relating to coroners, as set forth in the foregoing resolutions.

The following officers were elected to serve for the ensuing year: President, Dr. Nathan Jacob-

son, of Syracuse; First Vice-President, Dr. A. A. Hubbell, of Buffalo; Second Vice-President, Dr. R. M. Cooley, of Oswego; delegates to State Convention, Drs. B. I. Preston, of Rochester, and C. H. Richmond, of Livonia.

A STRANGE ACCIDENT.—Death sometimes seizes his victims in most queer and unexpected ways, but a stranger accident than one that happened not long ago in New York has seldom been recorded. A lady who had been suffering for several years from pulmonary trouble had been advised to try inhalations of hot air, and had purchased an apparatus for that purpose. In this apparatus is a thermometer, by means of which the patient is enabled to tell when the temperature is at the required height for the inhalations. One day the lady noticed a peculiar dryness of the throat coming on during the inhalation, but did not think much about it until it began to grow very uncomfortable. Then she inspected the apparatus, and found that there was a white powder in the inhaling tube. Removing this, she resumed the inhalations, but was soon obliged to desist on account of a sudden illness. This increased, and in spite of treatment the lady died the following day. Examination of the apparatus showed that the thermometer had broken, and the mercury falling out had been volatilized by the great heat and had caused fatal mercurial poisoning.—*Medical Record*.

AN UNJUST DISCRIMINATION.—The medical examining board of Washington consists of nine members, appointed by the Governor, three only of whom are regular physicians. At the recent annual meeting of the State Medical Association, held at Spokane Falls, a committee was appointed to draft a communication addressed to Governor Ferry. In this protest it is stated that over 700 of the 800 practicing physicians in the State are regular, yet the profession is in a minority on the board, and that they pray that a redistribution may be made whereby they may have a pro rata representation in that body.—*Weekly Medical Review*.

THE OLEATES IN BRITISH PHARMACOPŒIA.—Dr. Shoemaker's oleate of zinc and the corresponding oleates of mercury prepared by double decomposition have been recommended by the Royal College of Physicians of London for admission into the British Pharmacopœia.

TOPICS OF THE WEEK.

CHOLERA IN EUROPE.

Whilst watching to see whether cholera was this year to advance from Mesopotamia and Persia by means of the lines of human intercourse between those countries and Southeastern Russia news has come to the effect that Western Europe is again the seat of this disease, an outbreak having occurred in one of the Mediterranean provinces of Spain, namely, Valencia. The first place affected was the village of Puebla de Rugat, with a population of some seven hundred inhabitants, where the disease is believed to have commenced on May 13 last. At first came the usual denials as to the true character of the malady; then it was admitted that it was choleraic in character; and lastly came an official announcement by the Minister of the Interior to the Senate to the effect that cholera did certainly prevail in Valencia, but that it was not Asiatic cholera. This last statement involves an extremely interesting consideration. The commencement of the disease in Puebla de Rugat is said to have corresponded with the excavation of a considerable amount of drain-sodden earth in the village; and, remembering the history of the province of Valencia during the European epidemic of 1884-86, it is quite possible that we may here be seeing a recrudescence of the disease, owing to the circumstance that the contagium of cholera, which had been lying dormant in the earth, has by reason of the excavations and consequent exposure to sun, rain and other new conditions become again active; and in this very limited sense the present outbreak may fairly be regarded as a local cholera, rather than a cholera newly imported from Asia or elsewhere. But the history of the disease in Spain is essentially that of true cholera, as that term is generally understood. By June 15 it had steadily spread, until out of 100 cases there had been twenty deaths. In the meantime, also, it had extended to other places near at hand, and notably to Montichalvo, where the well-known virulence of real cholera showed itself by causing seven deaths out of a total of fourteen attacks. People now fled from the affected localities, and in this way further diffusion of the disease occurred, one death taking place at Albaida, and one attack being reported from Valencia itself. The latest intelligence refers to sanitary cordons around the infected villages, from which two-thirds of the population had already escaped; to certain operations intended to secure the burning of the polluted soil excavated at Puebla de Rugat; to quarantine restrictions against arrivals from Valencia and other Spanish ports, and to measures of sanitary reform after the mischief has been induced. Some diminution in the epidemic is also reported. Recalling the circumstances of the last epidemic in Spain, it should be remembered that some three hundred cases of cholera occurred in that country in 1884, the main outbreak being in the province of Alicante, but Valencia also suffering. This occurrence was followed in 1885 by a widespread epidemic which, according to the official returns of the Director-General at Madrid, caused 338,685 attacks and 119,620 deaths, the deaths in

the province of Valencia amounting to 21,612. And lastly, cholera still prevailed in certain parts of Spain during the early months of 1886. There is thus an interval of four years between the former and the present outbreak, and it is not difficult to conceive that the link between the two may have remained on Spanish territory.—*Lancet*.

CHOLERA IN THE EUPHRATES VALLEY.

When some months ago the Turkish authorities asserted the extinction or non-existence of cholera in Syria, while Russian consular agents maintained that it was still hovering on the borders of the Persian and Ottoman empires, we expressed our conviction that the subsidence of the epidemic was merely what might be expected at that season, and that it would reappear with the return of spring. And so it is; cholera is reported now as having broken out on the Imperial domains of Djedil and in the village of Bellek, near Bagdad, where six persons have died out of thirteen attacked. Bagdad was the headquarters of the epidemic last year, whence it was carried by the river boats far up the Tigris. We believe that the Foreign office received information of its occurrence as far north as Diarbekr and Erzeroum, though in the latter case it was more probably conveyed by road from Tabreez.

But, though it may thus appear to have receded, such a phenomenon would be without precedent. When, in 1847, it seemed to invade India from Turkestan, or, in 1865, it appeared in Armenia after it ravaged Constantinople and Saloniki, it was not retreating but performing a flank movement, and doubling on its own advance, as we have seen in the spread of influenza to India and Australia after it had overrun all Europe.

Cholera requires human intercourse for its conveyance, certain meteorological and local conditions for its development, and the injection of specifically infected water, etc., for its communication. Thus, while it will cross the Atlantic in a fortnight, it marches by slow stages through lands where railways are still unknown, retiring into winter quarters when traffic and travel are suspended, to reopen the campaign with the return of warm weather which is naturally earlier in the south and the plains than in northern or mountainous regions.

In the winter of 1846-7 it had reached precisely the same points as it did last autumn, and in like manner withdrew for a time to the lower valley of the Euphrates and Tigris, recrossing the mountains and plateau of Armenia in the spring, reaching Astrakhan and Taganrog in July, and Moscow and St. Petersburg in September, when, with the approach of winter, it disappeared only to break out with renewed intensity, and, as it had travelled with tenfold greater rapidity along the good military roads between the Caucasus and the capitals than it had previously done through Persia, so when once it touched the margin of the restless life and commercial activity of Europe it was drawn into the vortex, and there was not a country or large town but had been invaded before the summer was over.

If we may venture to prophesy, we would say that it will not proceed further up the Tigris Valley, but travel-

ling by the Euphrates will be next heard of at Aleppo, and perhaps Beyrout, it will enter Egypt *via* Jeddah and Suez and then leave Alexandria for the Levantine and Mediterranean ports. From Tabreez it will take the route *via* Erzeroum and Trebizond to Constantinople, and Odessa, and by Baku, Tiflis, Derbent, and Astrakhan over Russia.—*British Medical Journal*.

BACTERIOLOGY AND EPIZOOTICS.

At the anniversary general meeting of the Royal Agricultural Society some interesting information was furnished in the annual report, which indicates that this powerful and wealthy society is recognizing the importance of extending its work in the direction of scientific investigation of the etiology and prophylaxis of epizootic disease. Investigations, it was stated, had been carried on during the last six months in reference to the conditions under which tuberculosis was communicated from one class of animals to another, and from man to the lower animals, and also in regard to the microorganisms of pleuro-pneumonia, and the effects of inoculation. The action of the various organisms found in swine which had died of swine fever had been tested by experiments in feeding and inoculation, but no organism had yet been isolated which was capable of inducing typical swine fever or pleuro-pneumonia. Those investigations would be continued. The arrangements for the establishment of a department of scientific research at the Royal Veterinary College, under the grant from the Society, were proceeding, and it was expected that the department would shortly be in full work.—*Brit. Med. Journal*.

FASHIONS AND CUSTOMS OF THE DARK CONTINENT.

There is a sad monotony in our European fashions. Even the so-called changes are often fugues on a trivial theme, or thinly-disguised variations and reproductions of forgotten trivialities. Our new communications and lively interest in the gentle inhabitants of Central Africa may suggest some startling novelties. Besides the graceful extravagances of their head-dress—which, however hardly beats those of the seventeenth and eighteenth centuries, reconstructed for the public edification a few years since by Mr. Lewis Wingfield, and which may yet live again—there are many varieties among our new African *protégés* of the way they wear their heads. The ruling families of the Monbuttu tribe flatten their skulls so as to elongate their heads. The The Bari apply pressure just in front of the ears so as to heighten the head in that place. The Beli distinguish themselves by extracting the four front teeth of the lower jaw. Then there is a variety of ways of wearing a tail, which beat the Court train of the modern beauty in simplicity and perhaps in grace. The Madi wear cotton tails, which swing when they dance. Elsewhere a lady limits her costume to a twig arranged as a tail, and manages to seat herself at a court function with this appendage in a graceful and dignified manner without throwing it over her arm, and without the intervention of a chamberlain. In the matter of eating they are catholic and omnivorous, and nothing comes amiss from

a banana—which furnishes food and, when fermented, drink—to a fat pig or a deceased wife's sister, who gives little trouble there to legislators. Owing to their reticence as to their burial customs—for which dark reasons are suggested—it is difficult to pursue this branch of anthropological and osteological research. It will be seen, from the graver gleanings which we publish elsewhere, that there is much to interest the physician and the anthropologist. Dr. Emin Pasha's diary is a mine of dry but instructive reading on this subject (*Emin Pasha in Central Africa*).

PRINCE BISMARCK AS A PATIENT.

Prince Bismarck used to have the reputation of thinking anything but nobly of the medical profession, and his differences of opinion with the late Professor Frerichs as to the pathology and therapeutics of that important political organ, the liver, were expressed in language more familiar perhaps to scientific controversialists than to diplomatists. It is probable that the great statesman was a refractory patient, but bitter experience seems to have taught him that throwing physic to the dogs is not the most satisfactory treatment for the growing infirmities of age. He is now, according to a statement which he recently made to a representative of the *Daily Telegraph*, a model patient, paying the most exemplary obedience to the counsels of his medical adviser, Professor Schweningen. The Prince some years ago was in some danger of becoming the largest as well as the greatest man in Germany, but Dr. Schweningen relieved him of the growing load of "too, too solid flesh," by the judicious application of Oertel's method, which has been made known to English readers by Dr. Mitchell Bruce and others. The details of the Prince's present dietetic regimen may be interesting to those interested in the treatment of obesity. He says: "I am only allowed to drink thrice a day—a quarter of an hour after each meal, and each time not more than half a bottle of red sparkling Moselle, of a very light and dry character. Burgundy and beer, both of which I am extremely fond of are strictly forbidden to me; so are all the strong Rhenish and Spanish wines, and even claret. For some years I have been a total abstainer from all these generous liquors, much to the advantage of my health and my 'condition,' in the sporting sense of the word. Formerly I used to weigh over seventeen stone. By observing this regimen I brought myself down to under fourteen, and without any loss of strength—indeed, with gain. My normal weight now is 185 lbs. I am weighed once a day, by my doctor's orders, and any excess of that figure I at once set to work to get rid of, by exercise and special regimen. I ride a good deal, as well as walk. Cigar smoking I have given up altogether; it is debilitating and bad for the nerves. I am restricted to a long pipe, happily with a deep bowl, one after each meal, and I smoke nothing in it but Dutch Knaster tobacco, which is light, mild and soothing. Water makes me fat, so I must not drink it. However, the present arrangements suit me very well." Had Prince Bismarck shown himself as amenable to medical control in his robust prime as he finds himself compelled to be now, he would not perhaps have to submit to so strict a rule of life in his declining years.—*Brit. Med. Journal*.

PRACTICAL NOTES.

CRESALOL.

The salicylate of cresol, or cresalol, is analogous with salol or the salicylate of phenyl. It is crystalline, insoluble in water, sparingly soluble in alcohol, tasteless and having a pleasant odor resembling somewhat that of salol. Its antiseptic properties seem to be about the same as those of salol, but has a therapeutic preference over the latter in that it is relatively harmless, especially in the antiseptic treatment of the alimentary canal.

SUBSTITUTES FOR IODOFORM.

By the action of iodine on members of the phenol series in presence of an alkali a number of homologous compounds can be formed, all of which have much the same therapeutical properties as iodoform. One of these, the iodide of diiodophenol ($C_6H_2I_2OI$), has been proposed by Messinger and Nortmann, under the name of "annidaline," as an efficacious and inodorous substitute for iodoform. It is formed by heating together solutions of iodine in iodide of potassium; and of phenol in caustic potash, in the proportion of eight atoms of iodine to one molecule of phenol and four of potassic hydrate. There results a dark red amorphous precipitate, which, when dried, forms a fine powder without odor, insoluble in water and dilute acids, but soluble in alcohol, benzol, and chloroform. Aristol, another of these bodies, is the biniodide of dithymol, and is formed by acting on a solution of thymol in caustic soda, with iodine dissolved in iodide of potassium. It is a reddish-brown amorphous body without odor, and apparently non-toxic. Aristol is insoluble in water and glycerine, slightly soluble in alcohol, and readily soluble in ether. It adheres well to the skin, and is very convenient for employment in the form of powder. It has been used by Eichhoff in lupus and psoriasis with good effect.

ALBUMINURIA AS A RESULT OF THE MORPHIA HABIT.

At the meeting of the Société Médicale des Hôpitaux on May 9, Dr. Huchard pointed out (*L'Union Méd.*, No 58), that the abuse of morphia sometimes causes albuminuria, which leads to death by uræmia. Levinstein has published seven such cases, and Dr. Huchard contributed three others, all fatal from uræmia. As to the connection between the renal disease and morphinism, Dr. Huchard suggested that it might be through the action of the poison on the medulla, or by long-continued diminution of arterial ten-

sion; for he has found that morphine lowers arterial tension considerably, thus favoring passive congestion in the organs, the kidney among others. According to him, whereas excessive arterial tension will ultimately bring about arteriosclerosis, a persistent lowering of tension can lead to Bright's disease (obviously Dr. Huchard does not here speak of granular kidney, which is associated with high arterial tension). In conclusion, he pointed out that morphiomania, a cerebral condition, required different management from morphinism.—*Lancet*.

THE COLD BATH IN SCARLET FEVER.

The good effect of cold immersion in severe scarlet fever was well illustrated in a case related by M. Dieulafoy at a recent meeting of the Paris Hospitals Medical Society (*Bull. et Mém. Soc. Méd. des Hôpitaux*, No. 15). The patient, a girl sixteen years of age, was, on the sixth day of the fever, attacked by marked nervous symptoms, excitement, insomnia, suppression of urine, pulse from 120 to 150, and very high temperature. On the eighth day her condition was very grave, the eruption had disappeared, the temperature was 40.9° C. (105.6° F.), pulse irregular and intermittent, and the prostration extreme. In spite of the fact that she was menstruating, he advised the cold bath, and after some delay the friends of the patient permitted the measure. She was placed in a bath at 24° C. (75° F.) which caused severe shivering, cyanosis, and coldness of the extremities. But the pulse rate fell from 150 to 100, and the delirium ceased. At the end of fifteen minutes she was removed from the bath, which was repeated three times during the night, at higher temperatures. The treatment was continued up to the eleventh day, when the body temperature became normal. M. Dieulafoy advocated the bath in all malignant forms of fever, and its good effects in scarlet fever were endorsed by MM. Johel-Renoy and Duponchel, who had obtained similar good results. Dr. Huchard advised caffeine injections for the collapse.—*Lancet*.

ANILINE DYES AS ANTISEPTICS.

In an essay entitled "Aniline Dyes as Antiseptics," Professor Stilling, of Strasburg, claims to have discovered antiseptics strong enough to kill bacteria in a concentration not injurious to the human body, and at the same time diffusive enough to spread wherever on a wounded surface suppurative micro-organisms exist. In the case of a man of seventy, the whole of whose left leg between the ankle and the knee was covered with ulcers which would not heal, Professor Stilling sterilized them all in a few days with the best result.—*Medical Record*.

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

*Special Meeting, February 19, 1890.*W. S. FOSTER, M.D., PRESIDENT, IN
THE CHAIR.*(Concluded from page 36.)*TRAUMATIC SECTION OF BOTH TENDONES
ACHILLIS.

I have also recently treated a case of injury to one ankle joint, and to the leg on the opposite side, by a mowing machine. The man who subsequently became the patient stepped in front of the cutting bar of a mowing machine and struck the horses; the animals responded immediately; the cutting bar of the machine cut off the tendo Achillis, passed directly through the ankle, cutting off both malleoli, both posterior arteries, and the tendon of the posterior tibial muscle. On the other side the section was higher up; it passed through the tendon of Achillis and cut a piece off the tibia. Both the tendones Achillis were sewed with catgut, four stitches; the other stitches were put in place, and the usual antiseptic dressings applied without drainage. The man's wounds healed without any reaction or discharge whatever, and he walks well to-day without support. The union of the tendons was perfect. I think it is well to emphasize the fact that so long as there is circulation in a limb, an effort should be made to save it, and I think also that such an effort will usually be successful. In one particular, only, I would make some difference in the treatment from that laid down by Dr. McCann. I think that as times goes on I see less use for drainage tubes. When I first commenced to employ this treatment, I used a drain wherever I had a chance. There might have been some fluid, and there probably was some fluid blood running during the first 24 hours, but afterward it was coagulated; after the primary dressing of the wound, I never washed it out, and in three or four days removed the tube with the clot in it, and have never seen any reason to change that practice; but I can believe that drainage tubes are more used than is necessary, and that if we succeed with our antiseptics and apply proper pressure, we need not be afraid of any accumulation of fluid in a wound. I have also seen that if, in a soft cavity there has been a serious accumulation because proper pressure has not been applied, such accumulation give rise to no serious inconvenience, and when evacuated the walls of the cavity collapse and unite without further discharge. I would therefore think that, instead of endeavoring to put in all the drainage tubes possible, I would limit them as a matter of convenience. The tube does no harm

if properly used, but I think it is as usually applied unnecessary.

DR. HUSELTON: In the main I agree with Dr. McCann. I want to say that the amount of damage done to the skin in the case of a crush wound is no criterion of the amount of damage done to the interior parts, bones, muscles, nerves and vessels, and in accordance with my experience I think that where a hand, a wrist joint, an arm or an elbow joint, is caught between the bumpers of a car, the couplers or the deadwoods, sufficiently to produce a fracture, even if not compound, the best thing to do is to take that limb off; if you do not you will regret it and have to do it afterward. I have had considerable experience with injured ankle joints in railroad accidents. One of them was produced by the flange of a wheel; the joint was open so that I could put my fingers in. This I dressed antiseptically, cleansing it of all foreign material, washed it out, put it up antiseptically with a splint, without a drainage tube. I do not use drainage tubes very often, and I think I shall use them less often hereafter. This man got well and left my care before he had perfect locomotion in the joint; it had entirely healed, there was considerable motion; he was making a pretty good stagger at walking. In another case in which the right limb was crushed from the knee to the ankle joint, the left ankle was open so you could see into it also. In this case I amputated the right leg. I treated the ankle joint as in the previous case described, and the man to-day has a perfect ankle joint and a good wooden leg, and is walking around as well as any of us. I do not change the dressing so frequently as does Dr. McCann; sometimes do not remove the dressing for a week. I am governed entirely by the condition of the part and by the patient's condition as to temperature and pulse. If there are symptoms indicating the necessity of removing the dressing, I remove it, otherwise I leave it alone.

DR. RIGG: I would like to say a word in reference to the class of wounds spoken of by the gentlemen who have preceded me. In 1882, I treated my first compound fracture of the elbow. It was caused by an accident to a young man at work in a coal mine; he fell in front of a wagon, his foot caught in a frog, throwing the wagon off the track, the wagon running over his arm and elbow joint about the middle third. The superficial veins were lacerated, the arteries intact. The bleeding was controlled with little trouble. Since it was my first case of the kind, I took two physicians with me when I went to see the case a second time. They insisted on amputation. I removed at that time, I think, a half-dozen small pieces of bone; the young man insisted on leaving the arm as it was, believing there was a fairly good arm left. My plan was to treat it antiseptically, strictly so, and I placed it on an

incline, put no tight dressings to it at all, and had my dressings laid in such a way that I could at my own pleasure remove a portion of them to see what was going on beneath. I might say that the shortening as nearly as I could make it out was three and one half inches. I continued on this plan of treatment, and I may say without drainage tubes, until the arm was well and there was fair motion. There was never perfect motion. The humerus was very much thickened by reason of the fragments of bone not being adjusted closely. As to drainage tubes, I have used few. The last two cases of amputation I had, no drainage tubes were employed; they were amputations of the breast, and I believe them to be fairly good cases to test the value of a drainage tube, there being much surface made bare; and in both cases there was primary union throughout, something I have never seen where a drainage tube was used, and I feel that if the antiseptic treatment is followed out strictly, a drainage tube in the majority of cases is of little or no value, and oftentimes a little disadvantage.

DR. McCANN: I want to say a word in regard to two or three of the criticisms. In the first place, I do not think that because a limb, elbow or wrist has been caught between a deadwood or drawhead, it necessarily requires amputation. I can show any one who is curious enough to come to the West Pennsylvania Hospital instances where not only the bones were crushed, but the soft parts also, that were saved.

As to drainage tubes. I do not like to introduce a foreign substance into a wound, would rather get along without it if I could; but for a crush involving the tissue of the joint or the muscles there must necessarily be a large amount of fluid secretions.

Now I do not care whether they are pent up underneath the skin without any access to air, they are likely to generate poisonous and irritating leucomaines, which cause local irritation and constitutional infection. We all know that before the days of antiseptics the tight closure of wounds was far less favorable in its results than the open method. Who can be sure when he closes his wound, that he has rendered it aseptic? And if he has accomplished this, there may be floating in his patient's blood germs capable of infecting the wound.

DR. BUCHANAN: There are two points on which I wish to speak. The first is the possibility of saving a limb that has been fairly and squarely caught between the bumpers, with fracture of the bones. I believe it can often be done, and I will cite a single instance. About six or eight months ago, I was called with my father to see a little girl whose arm had been caught between the bumpers of two freight cars; the arm was crushed, wholly crushed from the wrist to the elbow. The vessels were not injured, but

there were multiple fractures of both bones and considerable pieces of bone had to be taken out. I think it safe to say more than half the muscular tissue was crushed off. The skin was extensively lacerated. The arm was shapeless. I do not think any injury could deserve the name of crush better than this one. It was so evidently a serious injury that her parents and friends and all persons who saw it thought the arm must be amputated. This arm was not amputated; it was thoroughly cleansed and put together, dressed with a straight splint; on no other kind of splint could the arm be kept in the semblance of an arm. It united without any suppuration, as is usual in such cases when antiseptically dressed, and while the child has not a beautiful arm, nor a very straight arm, she has a hand and a wrist and an elbow joint that are almost as useful as before. Now as to drainage tubes: I think it is hardly fair to bring up the surgery of ancient times to prove that drainage-tubes are good things. We will all admit that the essential object of a primary drain is to eliminate fluids which might become the breeding place for micro-organisms. And I am further satisfied that, if we can exclude local infection of the wound we need have no fear of its infection through the general circulation.

DR. GREEN: As I understand Dr. McCann in regard to drainage tubes, in applying an antiseptic dressing it is true of course that nobody can be positive that he leaves the wound without any danger of sepsis; I care not how carefully a wound may be washed, it is simply impossible to remove all the putrescible matter, a portion of it is bound to remain in the wound. It seems, therefore, the part of wisdom to provide means for its discharge.

Ohio State Medical Society.

Forty-fifth Annual Session, held at Columbus, June 4, 5, and 6, 1890.

J. McCURDY, M.D., PRESIDENT IN THE CHAIR.

DR. G. A. COLLAMORE, Secretary, reported that there had been nine deaths during the year out of a membership of 536.

The following papers were read:

"Errors of Refraction and Muscular Adjustment as causes of Nervous Phenomena," by Dr. C. F. Clark, of Columbus; "Cleanliness in Eye Surgery," by Dr. B. L. Millikin, of Cleveland; "Surgery of the Knee-joint," by Dr. N. P. Dandridge, of Cincinnati; "Treatment of Compound Comminuted Fracture," by Dr. S. L. McCurdy, of Dennison; "The Role of the Microbe," by Dr. A. R. Smart, of Toledo; "The Etiology and Treatment of Pneumonia" by Dr. S. P. Deahofe, of Potsdam; and "Vaginal Hysterectomy."

tomy," by Dr. A. B. Carpenter, of Cleveland. Dr. D. P. Allen, of Cleveland, showed a woman on whom he had done a successful nephrectomy.

A committee appointed to secure the more thorough organization of the State, reported in favor of making the members of all the county societies members of the State Society, as is done in Indiana. The recommendation was taken under consideration for one year and the committee continued.

Dr. N. Senn, of Milwaukee, was elected an honorary member of the Society.

The President's Address by Dr. J. McCurdy, of Youngstown, was on the subject, "The Care and Treatment of the Insane in this Country." He compared the history of the treatment of the insane in the various countries with that in the United States, which was to the great credit of the latter country. He advised the taking of the incurable cases from the county poor-houses, and placing them in specially adapted institutions. He thought the law of New York State should be followed by others, viz., that all officers and attendants should be compelled to pass an examination, and not allowed to enter upon the work unless qualified. They should, when fully entered upon their duties, be placed upon the civil list and not subject to the caprices of politics. The asylums should be built on the cottage plan. One-half acre should be allowed to each inmate, and rural life encouraged. Medical societies should recognize, more than they have done, the study and treatment of the insane.

The Recent Epidemics of Diphtheria, Scarlet Fever, and La Grippe, at the "Sailors' and Soldiers' Orphans Home," at Xenia, was the subject of a paper by Dr. C. M. Galloway, of Xenia.

The More Frequent Use of Chloroform in Obstetrics was the subject of a paper by Dr. J. F. Baldwin, of Columbus. His conclusions were as follows: Chloroform relieves pain. It shortens labor. It prevents shock. It prevents nervous and physical exhaustion. It reduces the liability to rupture of the cervix and perineum. It does not conduce, to any material degree, to post-partum hæmorrhage. It does not affect the foetus. It is absolutely safe when properly administered. He knew of no real contra-indications to its use, and urged that the boon be given to all women who ask it. He uses it chiefly in the second stage, carrying anaesthesia to the obstetrical degree merely; but at the last moment, when the head is distending the vulva and the agony is most extreme, he produces full anaesthesia.

The First Porro Operation Made in Ohio was the subject of a report made by Dr. J. F. Baldwin, of Columbus.

Carcinomata Mammæ was the subject of a paper by Dr. Dudley P. Allen, of Cleveland. The doctor believed that the common rules for diag-

nosis and the prevailing advice as to operation were bad. He insisted very strongly on the early operation. He thought we should not wait for immobility of axillary glands, for infiltration of tissue and depression of nipple. He recommended, as a method of gaining access to the axillary space, the finding of the axillary vein and following it up. On early diagnosis and operation depends the success of the case.

Puerperal Fever was the subject treated by Dr. G. H. Colville, of Harrisville. He favored anti-septic precautions and time in the open air after having seen an infectious case, before going to a woman in confinement.

The High Amputation of the Cervix vs. Total Extirpation of the Cervix was the subject treated by Dr. T. A. Reamy, of Cincinnati. He argued that if we remove the whole uterus for epithelioma of the cervix, why not remove the vagina, bladder and fimbriated extremities of the Fallopian tube? Three cases in New York, post mortem, showed disease limited to the external os. In two cases operated upon in Ohio the histological examination showed no evidences whatever of the existence of cancerous disease.

Intra-pelvic Surgery for the Relief of Inflammatory Diseases, was the subject of a paper by Dr. R. B. Hall, of Cincinnati. This paper was a report of one year's work, and a supplement to ten consecutive cases of abdominal section for the removal of the uterine appendages. The cases reached eighteen in number, and all but three had pus. All recovered. He wished to say that he could not make this report unmarred by a death, but that he had them where he could give them careful after-treatment. It has been asserted that the after-treatment in these cases amounts to nothing. As a rule, they do not require long treatment, but need very careful attention for a few days at first. These operations are among the most trying in pelvic surgery. No exact estimate can be made, before opening the abdomen, of the gravity and extent of the complications to be met with in any given case. No man has a right to open the abdomen unless he is prepared for any emergency which might occur, and is competent to deal with the conditions found on the spur of the moment. He thought that all cases of prolonged chronic salpingitis should have a prolonged and systematic course of treatment. In many of the cases reported, it was impossible to separate the adhesions without bursting the pus-sac. In every case where this occurred, and in those where there was much bleeding, the abdominal cavity was washed out. Free washing-out of the abdominal cavity need not be feared, the heat relieves the shock. He has constantly employed it, when necessary, for three years, and has not seen a single case where it caused bad symptoms. The irrigation is continued till the water returns

clear. Although all the cases recovered, many of them would not submit to an operation till *in extremis*.

Report of a Case of Cholecystotomy, with exhibition of specimens, was the subject brought before the Society by Dr. Rufus B. Hall, of Cincinnati. The patient was a slender woman, 39 years of age, the mother of seven children, the youngest 6 years of age. Severe pain and vomiting of bile was followed by the jaundice and the observation of an enlargement in the region of the gall-bladder, which disappeared in about two weeks. It was not long till these symptoms returned. An operation was suggested, but refused. She went on and grew worse, falling from 115 to 90 pounds. When *in extremis* and apparently dying the doctor was called in consultation. An operation seemed the only ray of hope, and was suggested and consented to. The enlargement, which was supposed to be the gall-bladder, proved to be the liver. The gall-bladder was enlarged, and an obstruction was found, caused by a stone in the common duct. Patient lost considerable blood, and it was necessary to reopen the wound. Patient survived the second operation. For fully a week her temperature was subnormal, once or more times during the twenty-four hours. The tube was removed on the sixteenth day, and on the twenty-first the sinus closed. The cholæmia rapidly disappeared. She complained of nausea but little after the third day, and vomited but twice after the operation was made. On the third day she retained liquid food, and after the fifth she had a ravenous appetite. The stools showed the presence of bile from the first movement, which was on the fourth day; on the twenty-eighth day she was able to go down stairs, and is now in her usual good health.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Epidemic of Hypnotism—Experiments to determine the Relative Antiseptic Action of Essential Oils—An interesting Contribution to the Chemistry of Gout—Personal and Domestic Hygiene, etc.

The world is passing, according to Dr. Richardson, through one of those mental epidemics which are closely akin to those which are purely physical. He calls it the "epidemic of hypnotism." Napoleon I., it is observed, on his return from Elba, literally hypnotized and governed by soldierly suggestion, not one man, but thousands; not women and weak men, but soldiers who on the field of battle would know no fear. The same kind of power, Dr. Richardson says, has been, and can at times be, exercised in medical practice.

Under it physical pain itself can be abolished for a time and the will of the subject be led into obedience, and even into deferred obedience, under the influence of the commanding will. Will hypnotism eventually supersede ether and chloroform? Dr. Richardson is of opinion that it will never become a serious rival of the physical anæsthetic, local or general, produced by volatile substances. Limited at this moment to the few who are susceptible to it, hypnotism must become still more limited as enlightenment goes on. As a method for producing oblivion from pain, he expects to find it further limited in application to short seasons of special social or meteorological cast, and if it fail, the influence of suggestion will fail with it.

Experiments have recently been made with the design of determining the relative antiseptic action of essential oils. The method adopted was to dip the cultures of bacteria, by means of platinum wires, into the oils for a certain time, and then to again embed them in agar-agar. The micro-organisms then developed if the oils employed were without effect. Typhus bacilli were killed by an immersion for twenty-four hours in the oils of cinnamon, cloves, thyme, verbena, absinthe, sandalwood and cedar. The oils of caraway, juniper, matico, galbanum, melina, valerian, lemon, savin, copaiba, pepper, turpentine, rose, camomile and cummin manifested a similar action in between twenty-four and forty-eight hours; the other essential oils first showed it after two to ten days. For comparison it was found that a 1 per cent. sublimate solution destroys the typhus bacillus within ten minutes; iodoform ether requires thirty-six hours. The glanders bacillus is killed by sublimate within fifteen minutes; the oils of cinnamon, cloves, thyme, verbena, geranium and origanum effect the same in from twenty-four to forty-eight hours; other ethereal oils in from two to fifteen days. It is suggested that the non-toxic quality of essential oils renders them suitable in the treatment of infectious diseases, but from the economical point of view this may be doubted.

At the recent meeting of the Royal Medical and Chirurgical Society, Sir William Roberts brought forward a most interesting contribution to the chemistry of gout. In a previous paper read before the society he adduced evidence to show that in the physiological state uric acid existed in the blood and urine exclusively as quadrates, and that when it appeared otherwise this was due to abnormal changes in the quadrates. The changes were traced which the quadrates underwent in urine, and which led up to the separation of free uric acid in gravel. At this meeting Sir William traced the changes which the quadrates underwent in the blood, and which led up to the deposition of sodium biurate in gout. These latter changes were connected with the

property possessed by the quadrurates of taking up in alkaline solutions an additional atom of base, and of thus being converted into biurates. It was this knowledge which permitted a coherent view to be presented of the succession of events which culminated in a paroxysm of gout. In the normal state the uric acid circulating in the blood as quadrurate was at once removed unchanged by the kidneys; but in the gouty state, either from defective kidney action or some other cause, the quadrurate remained in the blood, circulating in a medium which is rich in sodium carbonate, until it was transformed into sodium biurate, which is almost insoluble in blood serum, and is probably for that reason difficult of removal by the kidneys. In this way sodium biurate accumulated more and more in the blood, and when the accumulation had reached a certain point, was deposited in the crystalline form in the joints and elsewhere, thereby determining the occurrence of a fit of gout. Sir William Roberts based this view on a study of the reactions of blood serum and synovia with uric acid and the urates. In concluding he said gout was in essence a mode of nutrition associated with an error, which was uric acid; there was a colloidal form of uric acid, as well as the crystalline form, and the action of the two forms also differed. With regard to treatment, Sir William thought that if an attack was imminent a patient ought not to take mineral waters containing lime and soda, except very sparingly at first, and he thought that most of the good done at mineral springs was due to the water taken, and not to the salts contained in it.

Princess Christian presided at a drawing-room meeting, held at the residence of Dr. and Mrs. Symes Thompson, Cavendish Square, when Dr. Schofield, of the National Health Society, developed a scheme which aims at giving all ladies an opportunity of acquiring a practical knowledge of personal and domestic hygiene by means of a fixed course of educational lectures and demonstrations in the autumn at local centres all over London. These lectures, it was urged, would be particularly suitable to girls after leaving school. At that period, owing to the sudden cessation of brain work, nervous diseases were encouraged. As Dr. Symes Thompson explained, the classes would be not surgical only, but would deal with the subject of preventive medicine.

Mr. Jonathan Hutchinson has completed the first of his four volumes of Archives. There is a paper on the leprosy problem, in which the author emphasizes his views upon the cause of the disease being connected with the eating of fish.

It is announced that the foundation stone of the new building for the Royal South London Ophthalmic Hospital will be laid by the Prince of Wales during the month of July.

A case of accidental wounding of the bladder by a decapitating hook, through the bed on which

the patient was lying breaking down, just as the operator had completed the severance of the head, recently illustrated the necessity for the obstetrician to be sure that before he attempts any operation or operations the bed or table on which the patient lies is thoroughly secure. The hook in this case went completely through the anterior vaginal wall into the bladder. The wound was at once sewn up with two sutures and a catheter retained in the bladder. On the tenth day the sutures were removed, union being perfect.

Morphine in the urine is stated to be detected by adding a drop of liq. ferri sesquichloride, by which a blue color is at once produced. In this way the existence of morphiomania may be detected.

A great sensation has been caused through the objection of the General Medical Council to register the diplomas in public health granted by the University of Glasgow. G. O. M.

DOMESTIC CORRESPONDENCE.

How Diphtheria is spread by Corpses, through Carelessness in one Locality, and promptly restricted by a faithful Health Officer in another Locality.

To the Editor.—April 25, 1890, a copy of the *Atlanta Tribune*, Atlanta, Montmorency County, Mich., April 17, 1890, reached the office of the State Board of Health, in which appeared the following item:

"REPORTED TO BE OVER TWENTY CASES OF DIPHTHERIA IN AND AROUND VIENNA.—Vienna being an unincorporated village in Albert township, Montmorency county, a letter asking report and urging a prompt restriction of the alleged diphtheria was immediately sent to J. T. Dimmick, health officer of Albert township, May 8. The following reply was received:

"*Sir.*—This is to inform you that the item in the *Atlanta Tribune* was false. There has not been a case of diphtheria at or near Vienna. Dr. Warren, of Gaylord, said it belonged to la grippe and was not contagious. Yours truly, J. T. DIMMICK, Health Officer.

"P. S. Sulphur was burned as a disinfectant."

Just why disinfection was attempted if the disease was *not* communicable, remains to be explained. But that there was a fatal throat disease in or near Vienna, that communicated diphtheria in Lapeer county, was subsequently proved.

June 4, there was received from C. A. Wisner, M.D., health officer of Marathon township, Lapeer county, a final report of an outbreak of diphtheria in his jurisdiction, and in reply to the question as to "source of contagium and mode of introduction of the disease," he sent two certificates of death, given by F. C. Buchner, M.D., Atlanta, Montmorency county, which certificates were from the coffins of two corpses brought into Lapeer county. The certificates are as follows:

"Office of F. C. Buchner, Physician and Surgeon, Atlanta, Mich., March 23, 1890.

"To whom it may concern:

"This is to certify that Mrs. Dell Putman, of Vienna, died from suppurative tonsillitis, and that it is a disease not dangerous to the public health.

"FRANK C. BUCHNER, M.D."

"ATLANTA, MICH., MARCH 23, 1890.

"This is to certify that I was called to see the little girl Flossie Putman, and that it died of spasmodic croup, a disease not dangerous to the public health.

"FRANK C. BUCHNER, M.D."

That a man capable of practicing medicine, and especially one writing "M.D." after his name, could bring himself to sign two such certificates, on the same day, relative to two persons in one family, *both dead of throat disease*, certifying that it is "a disease not dangerous to the public health," and thus without precautions permit such dead bodies to go across the State to endanger the lives of innocent persons who rely upon such certificates, is, to say the least deplorable.

Dr. Wisner's report said :

The corpse of Mrs. Dell Putman, also that of her little girl, were brought from Vienna, Montmorency county, on the 24th of March, 1890, to her father's house here. Mary Tibbitts, a stepdaughter, was present, and helped to open the coffins and attend to the care of the dead until the funeral, which occurred on the 26th of March. I knew nothing of the nature of the disease that had caused their death at this time, but on talking with Mr. Putman on Tuesday, the 25th of March, I became convinced that it was diphtheria, but as I did not know positively, and they had a certificate from Dr. Buchner, stating that the disease which caused their death was not contagious, I could not very well prevent them holding a funeral. I notified them of my suspicions about the case, told the neighbors not to let any of their children go there at all, that the coffins should be closed tight, and not opened the next day at the funeral, which was held at their private residence, one mile north of this village. I was censured some for the stand I took, but as subsequent events proved, I think I was right, for on the 31st of March, 1890, just one week from the day she helped open the coffin of Mrs. Dell Putman, she—Mary Tibbitts—was taken sick with diphtheria and was confined to her bed eight days. I inclose to you the certificates which came on each coffin. Please do not destroy them, as they might be wanted to be referred to some time. I promptly quarantined this case, which happily was the only one which occurred. I think by warning the neighbors, and the funeral being held privately, we prevented a greater spread of the disease.

C. A. WISNER, M.D.

Columbiaville, Mich.

In this instance, through the care of the health officer, the outbreak of this very dangerous disease was promptly restricted, so that such fearful consequences as occurred from the similar instance at Zanesville, O., in the spring of 1890, were here averted. This is, therefore, one more instance enforcing the importance of requiring, in every case, a permit from the health officer of *the locality into which any dead body* is to be brought, and such notice of the time of the arrival of the corpse as will enable the health officer to take any precautions which he may deem to be necessary.

Any corpse dead from *any* disease is conclusive

proof of the presence of a fatal disease—therefore one which, under certain circumstances, may be dangerous to the public.

Every local board of health in Michigan is authorized by law to make such a regulation as would provide for such notification, and to enforce, against any person or persons, the penalty for its violation. And as the people of any locality are liable, at any time, to be at the mercy, in this regard, of an ignorant, careless or culpable doctor in some distant place, ordinary prudence would seem to dictate that every local board of health should make and enforce a regulation requiring notice to the local health officer of the arrival of every corpse.

HENRY B. BAKER, Sec'y.

Office of the Michigan State Board of Health, Lansing, June 7, 1890.

The Revision of the U. S. Pharmacopœia of 1890.

To the Editor :—Please find herein enclosed, a copy of report, by me, as Chairman of the Committee from this State, to Convention for Revision of U. S. P. 1890, held at Washington, D. C., May 7-10, and delivered to New Jersey State Medical Society June 11th.

As I think the report contains matter of importance to the entire medical profession, it is submitted to you ; and I would say that it is my opinion the American Medical Association should take decidedly more interest in the work of the Convention.

Very truly yours,

D. BENJAMIN, M.D.

Camden, N. J., June 12, 1890.

TO THE NEW JERSEY STATE MEDICAL SOCIETY.

Report of the Delegation to the Convention for the Revision of the United States Pharmacopœia of 1890.

The other delegates and alternates from the Society being unable to attend the Convention, I as Chairman, was compelled to be the sole representative of this Association at the Convention held in Washington from the 7th to the 10th of May last. About 200 delegates were present. I found this great State of New Jersey without due influence in this important convention ; assuming that the United States Pharmacopœia belongs to the Convention, it appears to me that this Society should be very careful of its interest ; I found that the Committee of Revision of 1880, had been the only Committee that had made any report of a financial balance in its possession, to the Convention ; that it, the Committee, had given out the publishing and sale of the work to a firm of New York publishers who had sold the book at a high price and an edition of the same amounting to about 17,000 copies, the profits from which were variously estimated

at from \$20,000 to \$54,000, while the scientific gentlemen who did the real work of revision, seemed to have been unpaid, and the vast sum of money (the proceeds of the work), which should have been the property of the Convention, was lost to it. It is estimated that the work could be published at a sum which would enable it to be put upon the market and placed in the hands of druggists and physicians at about half the price they have had to pay, and at the same time leave in the hands of the Convention or Committee of Revision a sufficient sum to pay for all necessary expert work and also the expenses of the Convention, including the actual expenses of each delegate. We can hardly expect men to be so enthusiastic as to go from New Jersey or from California for the purpose of doing scientific work for the benefit of the profession and the public and at the same time pay all their own expenses. Such men are soon financially so crippled as to be very limited in the amount of work which they can do. I believe it would be better for this Society to pay the expenses of its delegates; to nominate them with great care and elect them, in open session for the next convention which meets in 1900. I find further that the medical profession is not sufficiently represented, either in the Convention or in the Committee of Revision. I find further that there is danger of the work being influenced too much by interested parties. Wholesale drug houses, manufacturing chemists, publishing houses and other interested parties, were present and were active in trying to influence the Convention. A motion to make dispensatory publishers pay \$5,000 for the use of the copyright, was defeated, as was a motion to have a committee of business men appointed to attend to the financial affairs of the work. I hope that those of us who are living in 1900, will see to it that this Association is adequately represented in the great work of revising the Pharmacopœia.

Notwithstanding the foregoing criticism, very much excellent work was done by the Convention, most of which has already been published in the journals, and I have no doubt that so far as the scientific work and arrangements of the Pharmacopœia of 1890 are concerned, it will be a great improvement upon that of 1880.

Mr. Charles Rice, of New York, deserves especial mention as having done invaluable work.

The work is now in the hands of the Committee of Revision, which expects to have it ready for publication in about two years; meantime any suggestion from any member of this Association, can be forwarded to Dr. H. C. Wood, president of the Convention, and will be considered by the Committee. Respectfully submitted,

D. BENJAMIN, M.D.

Camden, N. J., June 9, 1890.

NECROLOGY.

Martin de Bartolome, M.D.

Dr. Martin de Bartolomé, of Sheffield, England, an ex-president of the British Medical Association, died suddenly, June 2, by angina pectoris, at the age of 77. Although of Italian parentage, he was "an Englishman in every sense of the word," and for nearly half a century stood in the front rank of his profession, in the esteem and affection of his Sheffield colleagues, to whom his sudden death was a shock most keenly felt. Dr. de Bartolomé had occupied many public posts of honor in local and other institutions, and not the least among them was the chair of the practice of medicine in the Sheffield School of Medicine.

Willis F. Westmoreland, M.D.

Dr. Willis F. Westmoreland, of Atlanta, Ga., died June 27, aged 62 years. He was a native of Georgia, a graduate at Jefferson College, a post-graduate student for three years of surgery, at Paris, chiefly, and became professor of surgery in the Atlanta Medical College, of which he was one of the organizers in 1854. During the late war he served as surgeon with the Confederate forces. He was one of the founders of the *Atlanta Medical and Surgical Journal* in 1855. He was President of the Georgia Medical Association in 1873, and Vice-President of the American Association in 1879.

BOOK REVIEWS.

CLINICAL DIAGNOSIS: THE BACTERIOLOGICAL, CHEMICAL AND MICROSCOPICAL EVIDENCE OF DISEASE. By DR. RUDOLF V. JAKSCH, Professor of Special Pathology and Therapeutics and Director of the Medical Clinic in the German University of Prague. Translated from the Second German Edition by JAMES CAGNEY, M.A., M.D., Demonstrator of Anatomy, St. Mary's Hospital and Medical School; Physician to out-patients, Hospital for Epilepsy and Paralysis, Regent's Park. With an Appendix by WM. STERLING, M.D., Sc.D., Brackenbury Professor of Physiology and Histology in the Owens College, and Professor in Victoria University, Manchester. With numerous Illustrations, partly in Colors. London: Charles Griffin & Co. Philadelphia: J. B. Lippincott Co. 1890.

This is a new and valuable work. The first German edition was quickly exhausted, and a second one, fresh from the hands of the author, has just been translated into English, and is pre-

sented to the American medical profession admirably illustrated and in the superior style characteristic of the publications of the J. B. Lippincott Co. It is worthy of a first place as a text-book, and dealing as it does in a most critical manner, with the bacteriological, chemical and microscopic evidences of disease, the latest literature upon these subjects is here so presented as to make it a book of great value both to medical practitioners and medical students.

Under as many separate chapters with appropriate subdivisions, the author gives very exhaustive studies of the Blood; the Buccal Secretion; the Nasal Secretion; the Sputum; the Gastric Juice and Vomit; the Fæces; Examination of Urine; Investigation of Exudations, Transudations and Cystic Fluids; the Secretions of the Genital Organs, and lastly an especially valuable chapter on the Methods of Bacteriological Research. A valuable appendix is also added by the translator, Professor Sterling. The illustrations will be found to be exceedingly helpful to those engaged in practical work. It is just such a work as can serve a valuable purpose as a class text-book in our medical colleges, where class recitations are required. It is an octavo of 350 pages, and comes to us from the well known firm of A. C. McClurg & Co., 117-121 Wabash Ave., Chicago. Price \$6.50.

REGIONAL ANATOMY IN ITS RELATION TO MEDICINE AND SURGERY. By GEORGE MCCLELLAN, M.D., Lecturer on Descriptive and Regional Anatomy at the Pennsylvania School of Anatomy; Professor of Anatomy at the Pennsylvania Academy of the Fine Arts; Member of the Association of American Anatomists, Academy of Natural Science, Academy of Surgery, College of Physicians, etc., of Pennsylvania. With about 100 full-page facsimile illustrations reproduced from photographs taken by the author of his own dissections, expressly designed and prepared for this work, and colored by him after nature. To be complete in two volumes of 250 pages each. Large quarto. Philadelphia: J. B. Lippincott Co.

The object of this work is to convey a practical knowledge of regional anatomy of the entire body; the text to embrace, besides a clear description of the part in systematic order, the most recent and reliable information regarding anatomy, in its medical and surgical relations. The illustrations are intended to verify the text and to bring before the reader the parts under consideration in as realistic a manner as possible. Vol. I will be ready for publication about December 1, and the second volume is expected to appear shortly thereafter. The work will be sold by subscription only; and salesmen will begin an active canvass the coming October.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of June, 1890, compared with the preceding month, the reports indicate that typhoid fever, cholera infantum, cholera morbus, dysentery, diarrhoea and intermittent fever increased, and that tonsillitis, cerebro-spinal meningitis, typho-malarial fever, pneumonia, pleuritis and whooping-cough decreased in prevalence.

Compared with the preceding month the temperature was much higher, the absolute humidity and the relative humidity were more, the day ozone and the night ozone were less.

Compared with the average for the month of June in the four years 1886-1889, membranous croup and measles were more prevalent, and typho malarial fever, cerebro-spinal meningitis, puerperal fever and whooping-cough were less prevalent in June, 1890.

For the month of June, 1890, compared with the average of corresponding months in the four years 1886-1889, the temperature was higher, the absolute humidity was more, the relative humidity was about the same, the day ozone and the night ozone were slightly less.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of June, 1890, at 58 places, scarlet fever at 52 places, typhoid fever at 28 places, and measles at 108 places.

Reports from all sources show diphtheria reported at 4 places less, scarlet fever at 3 places less, typhoid fever at 4 places less, and measles at 5 places less in the month of June, 1890, than in the preceding month.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 28, 1890, to July 4, 1890.

First Lieut. William N. Suter, Asst. Surgeon, is granted leave of absence for two months, to take effect August 6, 1890. By direction of the Secretary of War. Par. 3, S. O. 149, A. G. O., June 26, 1890.

Major James P. Kimball, Surgeon, is granted leave of absence for four months, to take effect when an officer of the Medical Department is assigned by his department commander to relieve him. By direction of the Acting Secretary of War. Par. 6, S. O. 152, A. G. O., Washington, July 1, 1890.

By direction of the Secretary of War, the following named Asst. Surgeons (recently appointed) will report in person for duty to the commanding officers of the posts designated opposite their respective names:

First Lieut. Frank R. Keefer, Ft. Leavenworth, Kan.

First Lieut. Thomas U. Raymond, Ft. Sherman, Idaho.

First Lieut. Henry D. Snyder, Ft. Reno, Ind. Ter.

First Lieut. Allen M. Smith, Ft. Snelling, Minn.

First Lieut. Ashton B. Heyl, Ft. Niobrara, Neb.

First Lieut. Joseph T. Clarke, Ft. Riley, Kan. Par. 6, S. O. 151, A. G. O., Washington, June 28, 1890.

Capt. William H. Corbusier, Asst. Surgeon, is relieved from duty at Ft. Lewis, Col., and will report in person to the commanding officer, Ft. Wayne, Mich., for duty.

Par. 7, S. O. 151, A. G. O., Washington, June 28, 1890.

First Lieut. Robt. R. Ball, Asst. Surgeon, is relieved from duty at Ft. Riley, Kan., and will report in person to the commanding officer, Ft. Spokane, Wash., for duty.

Par. 7, S. O. 151, A. G. O., Washington, June 28, 1890.

CORRIGENDA.

In the issue of July 5, page 17, top line, second column, for "Dr. Robert," read *Dr. J. M. Rolch*. Page 18, line 36, first column, for "securing sugar" read *occurring sugar*. Page 19, twelfth line from bottom of first column, for "piled on to racks" read *filled into sacks*. Page 20, line 33, first column, for "one three-hundredths," read *one three thousandths*.

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No. 3.

ORIGINAL ARTICLES.

II. AMERICAN VERSUS EUROPEAN MEDICAL EDUCATION.

A COMPARISON OF AMERICAN MEDICAL COLLEGE WORK WITH
THAT OF EUROPEAN MEDICAL SCHOOLS.

INCLUDING SOME THOUGHTS UPON FREE TRADE IN MEDICAL
DIPLOMAS OF FOREIGN MANUFACTURE.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY SAMUEL O. L. POTTER, A.M., M.D., (JEFF).
PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE IN THE
COOPER MEDICAL COLLEGE OF SAN FRANCISCO. AUTHOR OF
"A HAND-BOOK OF MATERIA MEDICA," ETC. "QUIZ-
COMPENDS OF ANATOMY AND MATERIA MED-
ICA," "SPEECH AND ITS DEFECTS,"
"AN INDEX OF COMPARA-
TIVE THERAPEU-
TICS," ETC.

Any American physician who is thrown into the society of European medical men, either at home or abroad, cannot fail to become sensible of a feeling of contempt for American medical education and persons, which pervades the European to such an extent that, polite as he may be, he is never able to wholly disguise it. This sentiment is most freely exhibited by medical immigrants to this country, by gentlemen who come here to settle after having received a foreign medical degree or diploma; and many who show it most offensively are Americans by birth though of foreign parentage, who have been sent abroad for their medical education. If hailing from the German or Austro-Hungarian empires, the diplomas¹ possessed by these gentlemen do not qualify them to practice medicine in the countries where they were obtained; for not one in a thousand of such medical immigrants possesses the certificate of the State examination (Staats-Examen) of the country in which he was educated. Although, however, their education is not of a grade sufficiently high to admit them to practice at home, they are admitted by our liberal laws and customs to all the legal rights and professional privileges enjoyed by the most highly educated physicians of our own or any other country. In return, very many of them rarely

fail to sneer at our colleges and their graduates, or to promulgate the idea that foreign medical education is so superior to ours that American graduates are not worthy of being entitled physicians.

This spirit pervades so many foreign medical men that it becomes exceedingly offensive to us at home, and equally humiliating abroad; especially to those who believe, with the writer, that the assumption is unjust to our professional men and schools; and that it is based upon false information and prejudiced statements, which find their way every now and again into the columns of the European medical press.

That we ourselves are to blame, for this contemptuous treatment from many who are inferior to our poorest graduates, is a fact which becomes apparent after devoting but slight attention to the subject. If we would honor ourselves and our Harvards, Bellevues, Jeffersons, etc., by demanding from the lawyers who make our laws the application of the same tests to, and restrictions upon foreign graduates, which their governments apply to our graduates, we would strike at the root of the evil, and enforce respect with a single blow. If our laws were made to provide that no diploma from a German medical school or University would be recognized by the Pennsylvania State Board of Examiners until such times as graduates of Pennsylvania medical schools received similar recognition in the German empire, we would hear the last about fraudulent American diplomas being the distinguishing feature of our system of medical education. The authorities at Berlin and Vienna would then speedily take the trouble to inform themselves in regard to the character of our different colleges; and would soon learn to distinguish between fraudulent American diplomas and true ones, as clearly as they do between fraudulent and genuine American bonds and other securities in their financial transactions.

The recent insolent action of the authorities of the medical school at Berlin, in denying to our graduates studying there the right to the letters "M.D." after their names in the catalogue, though giving it to graduated students from other countries, ought to open the eyes of every American physician, and excite a determined spirit of

¹ Throughout this paper I shall use the word "diploma" in its common significance, the certificate of graduation in either College or University.

retaliation, unless we have lost our manhood entirely, and are satisfied to submit to any insult from any source. The first effect should be to draw our students away from Berlin, where they have been flocking of late years for post-graduate study; which can be obtained by the English-speaking student with much more direct benefit at London or Edinburgh. If a student is not thoroughly versed in the German language he can obtain but little benefit from a post-graduate year in Berlin or Vienna; unless the atmosphere of those cities is so permeated with medical lore that the student inhales its wisdom as he breathes, or absorbs it from the beer he drinks and the tobacco he smokes. England is our natural mother educationally as in every other respect. Our old time physicians went to Edinburgh to finish up, and there has never been any real reason why our students should go beyond that ancient seat of learning any farther than London, to obtain any advantage of medical education.

To return to the question, however, whether our medical schools are as deserving of credit as those of Europe, will necessitate our looking somewhat closely at the latter, before drawing any conclusions upon the subject. The very fact that German degrees in medicine are discredited by their own governments, every graduate being obliged to pass the State Examination before being permitted to practice, shows clearly that the diploma of M.D. of the average German University is of little value at home as evidence of a good medical education. Such has always been the impression in England in regard to German degrees, which from time immemorial have been looked upon there with even more contempt than the Berlin dons show for American ones. And when we understand, that attendance upon lectures is not only not obligatory upon the German medical student, but is not even required by the regulations of many of their best Universities, we are not at a loss for a reason why their degrees are discredited. The rule in German colleges seems to be to let the students do pretty much as they please. Understanding this feature of German medical education, that students are admitted to the final examination in many schools, without any requirement as to previous attendance on lectures, we will require a great deal of faith to believe that their average graduates are as well educated as ours, who must attend 80 per cent. of the daily lectures for three collegiate years. The evidence for this statement does not rest on mere hearsay. I have before me the regulations of the University of Heidelberg,² for graduation in medicine; the first of which reads as follows, in extremely ungrammatical phraseology:

"1. In applying for the examination for the de-

gree of Doctor, no evidence of Medical Studies is required, further than the passing of the Examination."

Not only no lectures, but no pupilage, no evidence as to time of study, and the University expressly states that no such requirements are demanded. What a howl would go up all over the world if an American medical college should publish such an announcement to intending medical students?

Many of our State Examining Boards have passed resolutions to the effect that after a certain specified date they will not recognize the diplomas of schools which do not require attendance on three full courses of lectures. The resolution of the California State Board of Examiners is as follows:

"Resolved, that on and after April 1, 1891, the Board of Examiners of the Medical Society of the State of California will not grant certificates to practice medicine on diplomas issued after that date by colleges which do not require that *all candidates for graduation* shall have studied medicine not less than three full years, and *shall have attended not less than three full regular courses of lectures delivered during three separate years.*"

If these Boards stand by their announced resolutions they must throw out the diplomas of Heidelberg and many other prominent German Universities, which by their own published regulations show that they do not come up to such a standard as our licensing boards require.

The regulations of the University of Munich (München), are expressed in such broad terms, that it is evident that almost any kind of a medical education would comply therewith. They state as follows:

"Candidates, before being admitted to the Doctorate Examination, must present to the Medical Faculty the following:

1. A Gymnasial certificate, or at least such certificate as shows that the candidate has enjoyed a regular education.
2. Certificates of at least four years' attendance at a University or Medical Institution, and of attendance at the *Lectures on the "principal branches of Natural Science and Medicine."*

Then follow requirements for certificates as to the candidate's "*assistance at a birth, and the application of a bandage,*" and others equally trifling, after which comes a verbal examination of two hours in the German language, a dissertation written in Latin or German, and fees to the amount of \$75. This standard is far below that of the poorest of the American colleges. The term "*regular education*" in paragraph 1 may mean anything, and the "*Medical Institution*" of paragraph 2 would cover any sort of a concern which the Faculty chose to accept. So also the "*Lectures on the principal branches*" does not define the number of lectures, by whom, or the branches lectured on; and the verbal examination leaves no evidence behind to act as a check

² "Medical Education and Practice in all parts of the World," by H. J. Hardwicke, M.D., F.R.C.S., etc., London, 1880, page 85.

³ Op. cit., page 88.

upon the Faculty. In fact, the standard of the University of Munich for the degree of M.D. is ridiculously low; and if such regulations were promulgated by an American college, its diploma would be discredited by all our State Boards and Medical Societies.

The regulations of the Universities of Berlin, Leipzig, Bonn, Würzburg, etc., are more definite, and require from three to four years of regular attendance at a medical school. The Austrian Universities are all under the same rule, requiring at least five years of work in the medical school, the course occupying nine months in each year.

To all this, the Germanophile will reply, that the quality of the examinations is such that no unworthy candidate can pass. Of this we have no evidence but the official discrediting of these examinations by the State, which is rather against than in favor of their high rank.

A German physician now practicing as a specialist in one of our large cities, and a graduate in medicine of the University of Würzburg, as recently as 1884, told me himself that although an M.D., of that University he could never practice there, for he could not be admitted to the State Examination, not having gone through the proper gymnasium before entering the University. This shows that the degree of this University is granted with very little adherence to governmental regulations; and exhibits a rather anomalous state of affairs, that a man should be an M.D. of a leading University in a country where he never can obtain authority to practice medicine. Yet this man practices here on that degree, and freely abuses the educational institutions of the country which has been so much more generous to him than the land of his own educational career.

To recapitulate then, we see that the medical degrees of German Universities are discredited by the German authorities, and do not entitle their holders to practice in Germany:—that one leading German University, as late as 1880, announced in its regulations that it did not require any attendance at lectures, or anything else, as a prerequisite to examination for its degree of M.D.:—that another leading German University uses the term "*Medical Institution*" in defining the term of study required of candidates, with other equally indefinite requirements:—and that the quality of their final examinations is just as much an unknown quantity as it is in any other country.

British Medical Education is based upon a much higher standard than that of Germany in respect of the guarantees it gives of the possession of definite qualifications. A British degree or other "qualification" in medicine means that its owner is a man of a certain definite general education, who has received a strictly specified amount of medical training, gone through a certain amount of medical study, and passed exami-

nations as searching as it is possible for examinations to be.

Our evidence for this assertion is three-fold. In the first place the British government accepts the British college diploma as evidence of professional fitness, and makes it its business to see that the diploma has this value. In the second place, the candidate for a diploma is not examined therefor by the men who have taught him, but by a different set of Examiners, who know him only by a number: the Royal Colleges having no teaching powers, and the teaching schools having no power to grant diplomas of any kind. The college examinations in England, therefore, occupy the same place as the German State Examinations; but, being in the accredited position they are, their diplomas mean something; and the anomaly is avoided of having Doctors of Medicine who are not entitled to practice their profession under the laws of the very country which conferred on them the degree of M.D. through its chartered agent, the University.

In the third place, a British medical student is surrounded by definite rules at every step of his course. He must register under the law the fact that he has begun his study; he must pass a preliminary examination in general education before he can so register, the subjects of which are strictly defined;—he must spend so many sessions at a regularly approved hospital, in practical work;—he must attend so many lectures at a regular school on each specified subject;—he must receive certain definite practical instruction, dissect so many months, and finally, after not less than four years from the date of his registration as a student, he must pass certain examinations, in part oral, in part written, before a body of Examiners having no interest whatever in the school where he was taught,—men who have never exposed their hobbies to him in lectures, and who do not even know where he received his training. The public is guaranteed that every man who receives a British diploma has gone through this strictly prescribed course, and therefore it can rely upon the fact that the graduate has been properly prepared for his professional work, so far as human institutions can accomplish such preparation. The General Medical Council controls everything pertaining to medical education and registration in the kingdom,—and is a representative body, being composed of one member elected by each of the seventeen colleges, universities, and other qualifying bodies, with six others appointed by the crown.

In making any comparison between the educational standards of two countries, it is impossible to consider the maximum requirements or work done for any degree or other reward, the maximum always varying with each individual student. The only feasible standard of comparison is the *minimum*, the least possible amount of

actual work, time, etc., required to make the student eligible to a certain place or position. Another reason for this position is found in the universal experience of educators that the majority of students will seek the institutions which demand the *least* expenditure of time, work and money, in return for a certain, respectable degree. This is a law the world over, and instances to the contrary are only exceptions to the rule. When the foreign medical man criticizes our methods, it is our *minimum* requirements which he looks up and sneers at. Let us look at the *minimum* requirements for the medical diploma in another of the great countries with which we have most frequent association in matters medical.

The British course of medical study is laid down at *four years* at least; that is to say, the candidate cannot present himself for his final examination until the expiration of four years from the date of his registration as a medical student. So far,—so good!

When, however, we look at the requirements laid down for the various courses of study of which the period of four years is made up, we will find some things which are new to many an American graduate who has spent two faithful years at college, with one previous year or more of pupilage, and then has listened to a Canadian graduate's abuse of the American short term of study.

In the first place, the English student is permitted to spend, out of the four years, one year and a half, or "*one winter session and two summer sessions, receiving Instruction as a Pupil of a legally qualified Practitioner holding such a public appointment, or having such opportunities of imparting a practical knowledge of Medicine, Surgery or Midwifery, as shall be satisfactory to the two colleges.*" I quote from the most recent regulations for the Conjoint Examination by the Royal College of Physicians of London and the Royal College of Surgeons of England.

Now, this means the old system of preceptorship which we have always had in addition to our college courses, but which we never counted in speaking of a student's education; and which our colleges are now dropping entirely, and replacing by a third year in college, for reasons which seem good to the profession over here. When an Englishman speaks of our 2 years' course as against his 4 years, he forgets, or perhaps does not know, that our 2-years' colleges always required a previous year of pupilage, and that his own colleges permit 1½ years of their 4 years to be spent in the same way.

This reduces the obligatory period of actual work for an English diploma to 2½ years; but does he spend this 2½ years attending lectures? No, indeed!—he is only obliged to attend lectures for ½ year, one college term of six months. The rest of the 2½ years he is required to put in at-

tending, "*at a recognized Hospital or Hospitals, the Practice of Medicine and Surgery.*" The obligatory course of lectures includes on

Medicine and Surgery,—6 months each, 3 a week on each subject.

Anatomy,—6 months, or one Winter Session.

General Anatomy and Physiology,—6 months, 3 lectures a week.

Midwifery and Diseases peculiar to Women,—3 months.

Pathological Anatomy,—3 months.

Forensic Medicine,—3 months.

Attendance on lectures on Eye and Ear Surgery, and other special branches, as Histology, Microscopy, etc., etc., is optional with the student.

The 2½ years of actual work is thus seen to include only *one course of lectures*, the rest of the time being spent in the Hospital Service of the Medical School, including service as a clinical clerk and surgical dresser, clinical lectures in the wards, and other practical instruction. This hospital attendance must cover 3 Winter and 2 Summer Sessions, or 2½ years, the whole period not covered by the pupilage of 1½ year: so that evidently the six months' course of lectures is attended at the same time as the hospital service, by one who is doing the minimum time. This is borne out by the following extract from the announcement of St. Bartholomew's Hospital and College, for 1888-1889:

"With reference to Professional studies, other than those in a Medical School, it should be remembered that only 18 months of such studies are recognized by the College of Physicians and the College of Surgeons. Their Regulations require that *at least two years and a half* of the requisite four years of Professional study shall be passed at a *Hospital Medical School*; while, of course, the whole of the four years of compulsory Professional study may be so passed with advantage."

SUMMARIZING THE MINIMUM WORK for an English Diploma, we have—

- (1). Preliminary Exam'n in General Education, followed by Registration.
- (2). Pupilage with a legally qualified and approved Practitioner 1½ year.
- (3). Exam'ns in Anatomy, Physiology, etc., at various times during the course.
- (4). Attendance on the { Practice of an Hospital Medical School
—the Hospital Service 2 years.
Lectures of an Hospital Medical School
—one Winter Course ½ year.
- (5). Final Exam'n in Medicine, Surgery and Midwifery, after the minimum period of 4 years.

American Medical Schools must now claim our attention, and though it may seem a trite subject to many of you I trust that I will be able to present some new views and interesting features of their work for your consideration. Let us inquire into the minimum amount of work required from the American medical student!

Foreign medical men believe that in many American colleges a medical student can graduate

after six months' study. I will acknowledge that, and go further, and say that he can graduate without any study at all, if it so please him. The strongest and most arbitrary governments, with all the exercise of their power and resources, have never been able to entirely stop counterfeiting and smuggling,—both of which offences are constantly going on to some extent. How, then, is it possible for a profession, loosely organized, having no power or resources, to prevent the issuing of fraudulent medical diplomas by criminals who choose to manufacture such documents and sell them to others equally criminal? Such things have been done,—are being done,—and will be done to the end of time! They are more easily done in a new country than in an old one: they are exposed when found out, and the guilty parties punished when a jury can be found to convict them. In some few cases, similar fraudulent practices have been perpetrated under legal cover,—as in the case of the Buchanan College at Philadelphia, the proprietor of which had stolen an old charter, issued forty years before for a college which was never organized. This charter was forgotten, but had never been repealed by the legislature; and under it Buchanan and his faculty of Methodist ministers worked, and sold diplomas for several years. So also, in the case of the fraudulent school started a few years ago in Jefferson County, Kentucky, under the name of the *Jefferson Medical College*, expecting to trade on the reputation of an eminent school in Philadelphia, then over 60 years of age, having 10,000 alumni, and a faculty which always included the most honored names in the American medical profession. A similar instance was the recent attempt to erect a fraudulent medical school in Boston, under the name of the *Bellevue Medical College*, stealing the title of a renowned New York college which is known all over the world.

The Berlin college authorities recently told our students, (and individual Englishmen often echo the idea), that they cannot distinguish between our good and our bad schools, and hence must reject all. When they have any money to invest in our railroad bonds, our brewery stocks, or our mining corporations, they make it their business to so distinguish between the good and the bad,—between companies controlled by honest men, and those which are run by thieves. They know the difference between Ontario and Emma mining stocks;—they do not reject all our securities from their financial consideration because some are bad; and they can just as easily ascertain which of our schools are deserving of their respect, and which are not so. Three hours' work of a medical attaché to the German embassy at Washington would obtain all the needful information, if they desired it.

AMERICAN MEDICAL COLLEGES, good, bad and indifferent, may be arranged in the following four classes, viz.—

(1). Medical colleges which require a preliminary examination before matriculation,—3 full courses of lectures in all branches, of not less than six months each, in not less than 3 calendar years,—and pass examinations during the course;—with full clinical instruction, 3 days in a week, throughout the terms,—before the student is admitted to the final examination. Many of these schools have even higher requirements than the above, having graded classes, with pass examinations from one to the other; an optional and recommended course of 4 years in college; and require attendance on one or more of their Summer Courses before final examination.

In this class are the Medical Schools of the following Universities,—Harvard, Pennsylvania, Michigan (including the Homœopathic Department of the latter), Cooper Medical College of San Francisco, Jefferson Medical College and the Medico-Chirurgical College of Philadelphia, the College of Physicians and Surgeons of New York, the Boston University School of Medicine (Homœopathic), and a large number of others, embracing colleges in all the larger cities of the country, hardly to be distinguished from each other in the excellence of their teaching, the high professional standing of their Faculties, the strictness and honesty with which they carry out their requirements, and the high character of their graduates. This class includes about 60 per cent. of all the recognized schools.

(2). Medical Colleges requiring as pre-requisites to final examination, 2 full courses of lectures in not less than 2 calendar years, and a previous year of pupilage with a recognized practitioner. Many of these schools have an entrance examination, some adopted the 3-years' plan for a while, and abandoned it when their classes fell off; and most of them have announced their intention to shortly adopt the compulsory 3 years' college course. Such are the Medical Departments of many State Universities, including those of Oregon, Maryland, Iowa, Vermont, Virginia, etc., the University of the City of New York, of Georgetown, and the following colleges,—Bellevue, Yale, Rush, Miami, Ohio, etc.—the full list comprising many of the very best teaching schools in the country, and about 35 per cent. of all the recognized schools.

(3). Medical Colleges having no preliminary examination, and only requiring 2 courses of lectures, not necessarily in 2 calendar years, however, before admitting to the final examination. The list of these schools, though a very small one, is too large unfortunately; and sometimes a case occurs which would seem to throw a school, of which better things are expected, into this category. Their names cannot be given, inasmuch as to do so would only direct students to them, and aid them in their nefarious practices. They are known sufficiently well by every phy-

sician who has had a young man leave his neighborhood, and return after a year or so with a diploma and the title of Doctor of Medicine. They include about 5 per cent. of the recognized schools.

(4). Unrecognized Colleges and other Institutions issuing diplomas which are not accepted by any of the State Examining Boards, or by Medical Societies as a basis of membership. Several lists have been published from time to time of these so-called Colleges. The following is that published by the Iowa State Board of Medical Examiners, as embracing the schools which are not recognized by it. Most of them have no real existence, but would be found in the garret of some quack doctor's house, or in a place for giving hot baths, as was the case in one instance personally known to the writer.

NOT RECOGNIZED.

Diplomas from the following Colleges are *not* recognized by the Iowa State Board of Medical Examiners. For what reasons it is not stated :

American Eclectic College, Cincinnati.
American Health College, Cincinnati.
American University of Pennsylvania (Buchanan), Philadelphia (now suppressed).
Beach Medical Institute, Indianapolis.
Bellevue Medical College of Massachusetts.
College of Physicians and Surgeons, Buffalo, N. Y.
College of Physicians and Surgeons, Milwaukee.
Eclectic Medical College of Philadelphia.
Edinburgh University, Chicago and St. Louis.
Excelsior Medical College, Boston.
Hygeo-Therapeutic College, Bergen Heights, N. J.
Hygeo-Therapeutic College, New York City.
Joplin Medical College, Joplin, Missouri.
Livingstone University, Haddonfield, N. J.
Medical Department of the American University of Boston, Boston.
New England University of Arts and Sciences, Boston.
New England University Arts and Sciences, Manchester, N. H.
Penn Medical University, Philadelphia.
Philadelphia University of Medicine and Surgery, Philadelphia.
Physio Eclectic Medical College and Physio-Medical College, Cincinnati.
St. Louis Eclectic Medical College, St. Louis.
St. Louis Homœopathic Medical College, St. Louis.
Curtis Physio-Medical Institute, Marion, Ind.
American Anthropological University of St. Louis.
Medical Department of Drake University, Des Moines, Iowa.
King Eclectic Medical College, Des Moines, Iowa.

It will now become evident, to those who have followed me, that the vast majority of the schools of this country require 3 years attendance on lectures and clinics in the college ;—that nearly all the others require 1 year of pupillage and 2 years of college work, —and that the recognized schools falling below this latter standard are very few in number, and by the end of next year they will all be obliged to advance their standard to the 3-years' basis, on penalty of being discredited by the State Licensing Boards which have so declared their determination.

In comparing the *Minimum Time* spent by the

American and the English Medical Student, we have their time as follows :

COLLEGES OR SCHOOLS OF MEDICINE.	Tot. Years of Pupillage with a Practitioner.	Total Years of Actual Work in Medical School.		Tot. Years in Full Course of Study.
		Hospi- tal.	Lec- tures.	
Conjoint Examination for diplomas of Roy. Coll. of Phys., London, and Roy. Coll. of Surg., England.	1½	2	½	4
		Hospitals and Lectures.		
American Schools of 1st Class, numbering 60 per cent. of the whole.	..	3		3
American Schools of 2nd Class, numbering 35 per cent. of the whole.	1	2		3
American Schools of 3rd Class, numbering 5 per cent. of the whole.	..	2 (?)		2 (?)

So, then, as far as time is concerned, in our first-class schools we require 3 years of actual work to the English student's 2½ years ;—in the second-class schools we require 2 years of actual work to the English student's 2½ years ; and in our third-class schools everything is doubtful, but they form an insignificant part of the whole, and are located in small cities where their attendance is very slight.

Now, let us look at the *Minimum Work* done by a student in the school I know best, being that in which I have the honor to occupy a chair, the *Cooper Medical College of San Francisco*. In this school, one of the best of the First Class, the student must make, by roll-calls, at least 80 per cent. of the following schedule, before final examination, excepting the number of Months, which represents the actual minimum working time in the three years of the college course, for each branch of study.

COOPER MEDICAL COLLEGE, SAN FRANCISCO.

No. of Mos.				Branches of Study.	No. of Lec- tures.				No. of Clin- ics.				Tot. of Lect. and Clinics.
1 year.	2 year.	3 year.	Total.		1 year.	2 year.	3 year.	Total.	1 year.	2 year.	3 year.	Total.	
5	5	8½	18½	Anatomy	60	60	76	196	..	..	..	..	196
5	5	8½	18½	Anatomy, Demonstra'tns	20	20	52	92	..	..	..	..	92
5	5	..	..	*Anatomy, Dissections.	..	..	..	..	..	..	..	..	..
5	5	..	..	Physiology	60	60	..	120	..	..	..	..	120
5	5	8½	13½	Materia Med. and Thera.	60	60	76	136	..	..	..	..	136
5	5	3½	13½	Chemistry	40	40	32	112	..	..	..	..	112
5	5	8½	18½	Medicine	60	60	76	196	80	144	224	420	420
5	5	8½	18½	Surgery	60	60	76	196	80	144	224	420	420
5	5	8½	18½	Obstetrics	40	40	40	120	..	..	..	..	120
5	5	5	15	Diseases of Women	40	40	40	120	20	36	56	176	176
5	5	5	15	Diseases of Children	20	20	20	60	20	36	56	116	116
5	5	8½	13½	Eye and Ear Diseases	..	16	16	..	60	92	152	168	168
5	5	8½	13½	Micros. and Histology	40	40	56	136	..	..	..	..	136
..	..	3½	3½	Pathology, Demonstr.	..	16	16	..	..	..	..	..	..
..	..	3½	3½	Mental Diseases	..	16	16	..	..	..	..	..	..
..	..	3½	3½	†Physical Diagnosis	..	16	16	..	..	..	..	..	..
..	..	8½	13½	Nervous Diseases	..	..	..	..	20	36	56	56	56
..	..	8½	13½	Genito-Urinary Dis.	..	16	16	..	20	36	56	72	72

* Five parts at least. † Taught also in every clinic.

The Intermediate Course occupies 3½ months, from January 15 to April 30; it is obligatory on the third-year students, but is largely attended by

those of the second year. The Regular Term occupies 5 months, from June 1 to October 31, and is obligatory on all three classes. Ten clinics are held at the College every week in the entire calendar year; and 4 clinics are held at the City and County Hospital every week by the Clinical Professors of Medicine and Surgery. The student's daily work begins at a clinic at 8 o'clock A.M. on Monday, and continues every week-day to 5:30 P.M. except Saturday, on which day it ends at 4 P.M. This does not include extra-mural quizzes, and other optional work which is always going on during the term. In the Intermediate Course 16 Lectures and 16 Clinics are delivered in each week; in the Regular Course the weekly exercises number 24 Lectures and 15 Clinics. The Practical Anatomy is counted by parts of the subject, five parts, dissected to the satisfaction of the Demonstrator, being required of every student. Pass examinations are held at the end of every term, a Preliminary Examination is required before matriculation of all non-graduates in arts, and the Final Examination for the Degree is both written and oral, occupies nearly two weeks, and includes practical examinations at the bedside by the Clinical Professors of Medicine and Surgery. Besides the above, each member of the Faculty constantly quizzes his class either in the clinic or the lecture-room,—and knows thereby the exact standing of each student long before the final examination arrives.

Such is the minimum work in one school; its maximum varies with the individual students. Several voluntarily take a four-year's college course, all who can get such appointments, spend a year after graduation as internes in the various hospitals of the city and State;—some go abroad every year for a post-graduate course in Berlin, Vienna, Edinburgh or London; a few go up for the Army and Naval examinations; and several are obliged to remain or go elsewhere, having failed in the final examination.

It is not our policy to reject men at the final examination, if we can help it; but rather to weed them out at the end of their second year. If, at that time, we see that a student is not up to the standard, he is quietly advised of the fact, and he does not enter the third year's class. As a result of this policy we find our final rejections are few in number, a fact which is often misrepresented by persons who do not care to examine into the truth of the matter.

The self-sacrifice shown by our Faculty is but a sample of what is shown in nearly all our medical schools. Each member of ours gives, on an average, ten hours of his time weekly to college work, exclusive of the hours spent in preparation, and not one draws a cent from its treasury. Our President and Founder, L. C. Lane, A. M., M.D. (Jeff.), L.L.D. (Union Coll.), M.R.C.S. England, M.D. (Berlin Univ.), has spent of his own private

funds fully \$250,000 on our building and site; and this in the evening of his career, after his professional triumphs have been won, and when he has nothing to obtain in honors, for he has received them all, from either his profession or the community. Such noble work as this is being done throughout the land by great-hearted men; and it is inexpressibly provoking to see the results of their self-abnegation referred to with contempt by others, who never in their lives gave a dollar or a minute to the cause of medical education.

One of our college experiences may prove interesting to our critics over the water. We have applications every year for admittance, asking short terms and guaranteed graduation, from people who do not know our methods; but fully 90 per cent. of such applications come from the English colonies in Australia, Tasmania, New Zealand and British Columbia, from would-be physicians who have read in English medical journals that medical diplomas are to be purchased here in open market. These applicants always state that they cannot afford to stay very long, and usually add the remark that expense is no object. Our Dean replies to all such by sending a copy of our Announcement, and adding the information that its requirements are strictly adhered to. Our organic law forbids our conferring an honorary degree, or even a degree *ad eundem*.

Some few English medical men have given credit to American medical colleges for what they are doing. For example, in the preface to the book already cited, Dr. Hardwicke says: "In some of the States of the Union there exist a great number of first-class and highly respectable Universities and Medical Colleges, capable of affording as good and sound an education as can be obtained in Europe. *Harvard, Pennsylvania, New York, Bellevue and Jefferson, are names honored as much in Europe as in America.*"

Unfortunately, however, there are many instances of a less fair spirit among English medical writers. The following is a recent and most glaring instance:

"AMERICAN DEGREES.

"Having written a reliable friend in the United States of America for information respecting a certain American Degree, he kindly writes (October 10, 1889) 'The enclosed bears on your enquiry.' The following is the enclosure from the *Kansas City Daily Star* of October 2, 1889:

"Degrees are acquired in the United States with alarming facility. The *North American Review* for October contains a very instructive, if somewhat alarming article by Drs. Eggleston, Flint and Doremus, in which, under the title 'The Doors Open to Quackery,' the writers discuss the present methods by which professors of the art of healing are manufactured in America, and turned loose upon a luckless community. Dr. Eggleston says that there are 'not a dozen American medical colleges out of 117 that would be tolerated for a moment in any country that pretends to be civilized;' and this, despite the efforts of the best men in the medical profession, which are openly combated or secretly thwarted by

Table showing Work of Students in certain AMERICAN MEDICAL COLLEGES, also the same
ject the number of *hours occupied per week* of obligatory terms, and the *Total Number*
ments for 1888-1889, by SAM'L O. L. POTTER, A.M., M.D., Pro-

AMERICAN.	College of Phys. and Surg., New York.* (Obligatory course.)				Cooper Medical College† of San Francisco. (Obligatory course.)				Jefferson Medical College of Philadelphia. (Advised course.)				College of Physi- cians and Surgeons. Chicago. (Advised course.)				Medico-Chirurgical College of Philadelphia. (Obligatory course.)			
	1	2	3	Total.	1	2	3	Total.	1	2	3	Total.	1	2	3	Total.	1	2	3	Total.
ANATOMY, Lectures.	3	3		204	4	4	4	290	5	3		200	6	7		286	3	4	2	216
Dissections.	6	4		340	10	5		300	10	5		375	10	5		350	8	1		204
PHYSIOLOGY, Lectures.	3	3		204	3	3		120	3	3		150	6			132	3	4		168
Histology and Micros.	4		1	170	2	2	2	135	3	4		100	3			66	4	1		120
CHEMISTRY AND PHYSICS.	3	3		204	2	2	2	115	3	6		225	8			176	7	4		264
Med. Chem. & Urinalysis.	4			136			1	20			1	25		5	4	198		2		48
MAT. MEDICA AND THERAP.		3	3	204		3	3	135	5	5		200	3	3		132	2	3	2	156
Jurisprudence.										1		25		1		22			1	24
Pharmacy.										2		50					2	½		60
Pharmacology.										1		25								
Hygiene.										1		25		1		22				48
MEDICINE, PRIN. AND PRAC.	3	3		204	3	3	3	195	3	3	3	225		4		88		4	5	228
Med. Pathology.		1		34			1	15		4	4	200		2		44		1	4	120
†Phys. Diagnosis.							1	15			3	75		½		12		1	½	36
Mental Diseases.		1		34			1	15						2		44			1	24
SURGERY, PRIN. AND PRAC.	3	3		204	3	3	3	195	3	3	3	225		4		88		3	4	156
Surg. Pathology.														1		22				72
Minor and Operative.										4		100				22		1		
Dental.														1		22				
Orthopedic.														1		22			½	12
Genito-Ur. & Dermatology.							1	15						2		44			2	48
Ophthal. and Otol.			1	34			1	15						1	1	44				
Laryngological.														1		22				
OBSTETRICS.	3	3		204	2	2	2	120		3	3	150		4		88		2	3	120
Gynecol. and Pædol.					3	3	3	240			4	100		2		44				
CLINICS, Medical.	2			68		4	4	220	7	7	7	525		5	5	220		3	4	168
Surgical.	4			136		4	4	220	7	7	7	525		5	5	220		2	5	312
Gynecol. and Pædol.		1		34		2	2	110	1	1	1	75		1	1	44		1	4	132
Nervous.			1	34			1	15												
Ophth. and Otol.			3	102		3	3	155	1	1	1	75		1	1	44			1	24
Genito-urinary.			1	34			1	15						6	6	264				
Other Clinics.																				
DISPENSARY AND HOSP. WORK.						2	2	110			3	75								
Recitations.	Roosevelt Hospital				Weekly each chair.				Private quizzes				Daily in College.				Daily in College.			
Hospital with College.	Vanderbilt Clinic.				City and Co. Hosp.				Jefferson Col. Hos.				Cook Co. Hospital.				Med. Chir. Hosp.			
Dispensary with College.					Morse Dispensary.				At Hospital.				At College.				At College.			
Course. { Preceptor	3 or 4 years.				3 or 4 years.				1 year				1 year				3 or 4 years.			
College.	Required.				Required.				2 or 3 years.				2 or 3 years.				Required.			
Entrance Examination.	Yearly.				Yearly.				Required.				Required.				Yearly.			
Pass Examinations.	3 after 2d year.				2 after 2d year.				4 after 2d year.				3 after 2d year.				3 after 2d year.			
Final Examinations.									2 weeks.								3 weeks.			
Sessions yearly- Regular	34 weeks.				20 weeks.				25 "				22 weeks.				24 "			
Spring.					15 weeks.				7 "				8 "				8 "			
Obligatory Sessions	102 weeks.				75 weeks.				75 "				66 "				72 "			
No. of Instructors.	33				21				18				36				41			
No. of Students.	809				126				584				162				151			
No. of Graduates.	115				41				176				46				30			
Total Fees.	\$500				\$315				\$325				\$210				\$255			
Endowed by-	W. H. Vanderbilt.				Dr. L. C. Lane.				Trustees.				Faculty.				Dr. Pancoast, et al.			
How Endowed.	Buildings, etc. . . .				Buildings, site, etc.				Buildings, site, etc.				Buildings, site, etc.				Buildings, site. . . .			
Value of Endowment.	\$500,000				\$300,000				\$350,000 (?)				\$50,000 (?)				\$100,000 (?)			

* Based on an estimated number of three lectures a week from seven principal chairs.

† Exact figures, the 3d year having an obligatory Spring Course of 15 weeks, besides the regular course.

‡ Taught in the clinics in every college, though often not mentioned in announcements.

§ Includes two by the Demonstrator every week.

|| Estimated; taking the average time occupied in dissecting the five parts usually required.

P—Private classes in this subject, for which extra fees are charged by the instructor.

¶ In the Dispensary Medical Clinics of this College, the senior students are assigned by twos to each patient, whom they examine under the supervision of an assistant, making a full report with treatment, diagnosis, etc., on a blank form to the Professor in charge, who goes over the work with them in presence of the entire class. A similar method is pursued, somewhat modified, in the other clinics (10 in all), so that the senior student, during the two terms of his third year at college, personally examines and prescribes for, on an average, over 100 cases of disease before graduation. This is one of the advantages of having many medical colleges, with small classes, instead of a few schools in the great

cities, with classes so crowded that these personal advantages are impossible of realization to the average student in their halls.

§ This graduating class was twice as large as the average of this school, and included several graduates of other colleges, and several "accumulations" from previous classes.

NOTES.—In selecting the colleges to be tabulated herein I have avoided taking all of the very best, omitting Harvard, University of Pennsylvania, University of Michigan, etc., and in their stead taking three "two-year" schools, so as to give a fairer average. In doing so, however, I have tabulated the "three-years' advised course" of these schools, for the reason that after this year (1890) they adopt the compulsory three-years' course.

The difficulty of tabulating the varying requirements on one form has been very great, from the fact that some schools omit to designate particular hours for certain subjects, which are known to be taught therein. For example, Hygiene is given a definite hour by three schools, in another it belongs to the chair of Practice, and in another to that of Materia Medica, without any assigned hour in either case. Though left blank in the table it must not be inferred that this subject is ignored by these schools.

The daily work of the English students is very difficult to understand in tabular form, for one who is not thoroughly acquainted

required for an **ENGLISH QUALIFICATION IN MEDICINE AND SURGERY**; giving for each sub-
of *Hours* so occupied for the entire Course of Study. Compiled from the Announce-
fessor of Medicine in the Cooper Medical College of San Francisco.

Bellevue Hospital Medical College, of New York. (Advised course.)				ENGLISH.		Double Qualification, L.R.C.P. (Lond.), M.R.C.S. (Eng.) St. Bartholomew's Hosp. and College Regulations, 1888-1889.										REMARKS.																						
						Years.																																
				Sessions.		1st year.		2d year.		3d year.		4th year.		Total Hours.																								
				Weeks.		S.	W.	S.	W.	S.	W.	S.	W.																									
1	2	3	Total.			12½	22½	12½	22½	12½	22½	12½	22½																									
3	3	..	144	ANATOMY, Lectures.		May be spent as the private pupil of a recognized practitioner.	May be spent as the private pupil of a recognized practitioner.	Daily	Daily	May be spent as the private pupil of a recognized practitioner.	Inst.	EX.	EX.	90	1st and 2d examinations. Optional.																							
6	4	..	240	Dissections.										12 mos.																								
3	3	..	144	PHYSIOLOGY, Lectures.										67																								
..	..	P.	..	Prac. Physiology.										35																								
2	2	..	96	CHEMISTRY AND PHYSICS.										62																								
½	½	P.	24	Prac. Chemistry.										75																								
3	3	..	144	MAT. MEDICA AND THERAP.										50																								
½	½	P.	24	Forensic Medicine.										37																								
..	..	..	..	Pharmacy.										Inst'n.																					
..	..	..	..	EXAMINATIONS. . . . .										..														
..	..	..	..	Hygiene.										1																					
3	3	..	216	MEDICINE, Lectures.										67	C.C.—Clinical Clerk. Optional.																							
1	1	P.	48	Med. Pathology.										48																								
½	½	P.	12	Phys. Diagnosis.										6 mos.																								
½	½	P.	24	Mental Dis.										1																								
3	3	..	216	SURGERY, Lectures.										67																								
..	..	P.	..	Surg. Pathology.										48																								
..	..	..	..	Operative.										185																					
..	..	P.	12	Minor.										6 mos.																								
1	1	..	72	Orthopædic.										1																								
1	1	..	72	Dermatology.										1																								
1	1	P.	48	Ophthalmology.										2																								
1	1	P.	48	Larynx.										2																								
2	2	..	144	MIDWIFERY, etc., Lectures.										6	D.—Dresser. Optional.																							
1	1	..	72	Labors.										75																								
2	2	..	144	CLINICS, Med., Lectures.										20																								
4	4	..	288	Surgical, Lectures.										35																								
1	2	..	88	Gynecological.										35																								
½	½	P.	36	Ophthalmological.										24																								
..	..	..	..	VACCINATION.										Inst'n.																					
..	..	..	..	EXAMINATION.										EX.																					
..	..	..	..	DISPENSARY AND HOSP. WORK.										92 wks.																					
In Spring Course.				Recitations.		No information.										NOTE.—It will be urged by those who decry our methods and our institutions, that few English students get through on the minimum requirements of 4 years, of which 1½ may be in private pupilage. The same may be said of many American Colleges. In the Cooper, last year, the graduating class included one 5 year student, and three who spent 4 years in the school, some per force, some voluntarily. The Phys. and Surg. of New York is notoriously stiff in its final examinations, many failing every year, yet it had the largest class in the U.S. in 1888-89, numbering in that year 800, speaking well for the American medical student.																						
Bellevue Hospital.				Hospitals.																																		
At Hospital.				Dispensary.																																		
1 year.				Course, { Preceptor																																		
2 or 3 years.				College.																																		
4 after 2d year.				Entrance examination.																																		
24 weeks.				Final examinations.																																		
10				Sessions.																																		
48				Yearly.																																		
50				Obligatory sessions.																																		
441				No. of Instructors.																																		
137				Total Fees.																																		
\$325																																						
Hospital																																						
Buildings.																																						
\$20,000 (?)																																						

quacks, charlatans, and low class colleges. It clearly is not for want of degree granting colleges that the American doctor is less informed than his brethren in other countries, for it seems that, taking the average of all other countries as a fair average, there are schools enough in America to educate medical men for 300,000,000 people, but in most of them the standards for matriculation and graduation have been put down so low as to make an American diploma almost a reproach in other countries. It will be remembered that Dr. Rauch, of the Illinois

Board of Health, visited Montreal during the small-pox epidemic that raged in this city some months ago. Dr. Rauch was able to speak in terms of high commendation of the general sanitary regulations of Montreal, and the means it has at command for coping with zymotic disease. Dr. Rauch, it seems, put up a young journalist of Springfield, Ill., to try for a medical diploma from the Bellevue Medical College, Boston, Mass., the President of which is a rabid anti-vaccinationist. The diploma was granted and the reader will be interested by the perusal of the thesis on the strength of which this license to kill was issued.

VACCINATION.

'The Grate increase of Disease in these Late years Calls for Explanation Undoubtedly the Doctors of this day is to blame for very much of it. But more than any-

with their method of education. I have arranged this part of the table according to my most careful study of the recent regulations (1888-89). In the English table a figure not carried into the total column signifies that, though taught in the school, that particular subject is not required by the regulations for the final examination.

SAM'L O. L. POTTER.

330 Sutter St., San Francisco, May 1, 1890.

thing Else in my opinion is the Inseartion into the Pure Blood and Vitle fluid of our Inosent offspring of that vile Diseas of the animals cowpox So grate has the Curse Became that Priviledges of School Edication is denied in this and Many other States to those who wisely refuse to Submit to this Curse that is just a Peace of the Nonsensikal Medica teachings of the Day when Theory and Imagination Rool instead of Practical Expearance and which keaps its Studends in close Confinement a Big part of three or four years to hear the Nonsens which is thear peddled out to them consumption Siffles and Skin Disease Runn Wild among the people This calls for a Strong Kick on the Part of our noble Profession which should seek to build upp the Health and Streangth of the People instedd of Planting the seeds of Diseas in them To Prove that Vaccination Don't do no good we neadnt say no more About a Thing that is so Plane to Euy thinking Man or Woman Eather we should all Band ourselves together in all Parts of the Country to Shutt off this Cursed Practiss the People Should be Tought Better But the Days is Cumming when Enlightenment will take the Place of Ignoranse and Prejudice and when that Time Comes these sannatics who live by Scaring People will have to step aside and Vaccination will not be Heard of any more."

[To save us in England from the deluge of worthless American degrees, there ought at least to be a law compelling the publication after the degree of the source whence it was obtained.]—*Exch.*

The tone of this publication is exceedingly aggravating, putting, as it does, an impudent forgery and fraud upon a level with our medical schools, and insinuating that such degrees are "American Degrees," as it does by its title, as also by the mis-statements of its correspondent. If, in some backwards settlement of Canada or Australia, named *Oxford*, some two or three men should get together and style themselves a University, "*The University of Oxford*," issue diplomas to whoever would buy, making M.D.s, D.D.s, L.L.D.s, etc., and when the fraud was exposed and published, an American medical journal should quote the circumstance as an illustration of the value of English degrees, the case would be an exact parallel. When referring to the Buchanan fraud in Philadelphia, most Englishmen who know of it will use it as an illustration of the methods of Philadelphia medical schools; but will not tell that Dr. Buchanan was a graduate of the Faculty of Physicians and Surgeons of Glasgow, in Scotland;—that every one of his associate professors were Methodist Ministers, not physicians,—and that he and they are now doing a long term in the penitentiary for their fraudulent practices. As remarked before, imperial governments cannot entirely stop the practices of counterfeiting and smuggling, how then can we, without power of any kind, prevent forgery in our professional diplomas.

England and the United States should stand hand in hand, and shoulder to shoulder, against all the world besides; and if they only would do so, no power on earth could injure either of them. But depreciation of our institutions by English

writers makes Americans sulky and "ugly," as they say themselves, and they will not *try* to rectify erroneous beliefs regarding matters which should be better understood. They look to England as to a mother, and expect her praise and her encouragement in their progress upward and onward. They have so far received Englishmen as honored elder brothers; but some day they will turn upon this persistent misrepresentation, stop all free trade in medical diplomas of foreign manufacture; and, following Canada's example, force other nations to respect their educational institutions.

The history of the Canadian episode is very instructive in this connection. A few years ago some graduates of her medical schools were refused registration in England upon their Canadian diplomas; whereupon Canada, with becoming self-respect, passed laws requiring English medical immigrants to submit to local examination before being licensed to practice in Canada. At the very next session of the British parliament the government brought in a bill, which passed, and is now the law of Great Britain. This bill provides for the registration in Great Britain of graduates in medicine of *any country* which grants reciprocal rights to British graduates, provided,—that the Queen in Council has named a day upon which said law shall take effect for each State or Country. The Queen in Council speedily named a day for Canada, but has never yet done so for any State in the American Union. It would be interesting to see whether she would propose to do so for any American State which should legislate against the recognition of British medical diplomas.

When our difficulties are taken into consideration,—when it is remembered that every American State, young or old, governs its own educational matters;—that the central government has no control whatever over the practice of any profession, except in its own courts, and in its own military and naval establishments;—that, as yet, we have no endowments for our medical colleges;—that, under our democratic institutions every medical sect or delusion can obtain sufficient following to secure from the politicians charters for so-called colleges, with the right to issue diplomas;—that we have three distinct bodies of medical practitioners, recognized by law, viz.: the Regular, the Homeopathic, and the so-called Eclectic;—that every effort to secure the passage of laws to control medical practice and education is fought bitterly by two of these bodies, and by spiritualists, faith-healers, magnetic healers, Christian Scientists, metaphysical healers, electro-biologists, *et hoc genus omne*;—that juries in the large cities are often composed of the scum of European humanity;—that such juries will not convict the most flagrant violators of medical laws;—it is really a wonder that we have done as well as we have in this matter of medical education. Only by the

self-sacrificing labor of the much-abused Professors in our great schools, have these institutions reached the high standard which is conceded to them by all fair-minded investigators.

One fact, which is patent to all close observers of matters medical, and which is highly complimentary to American graduates, is that the great majority of the quackish members of the profession in this country is composed of foreign graduates. Leaving out of consideration the openly-acknowledged quacks, many of whom append foreign titles to their names, but whose claims cannot be verified, and looking at the recognized medical men who, in every community, are running in non-ethical paths, we will find 99 per cent. of them to be graduates of foreign schools. The men who erect blazing signs, brass hands with index fingers pointing from the side-walks to their offices;—who drive foreign-looking vehicles, and carry therein terrier dogs trained to bark at the passers-by;—who falsely claim to have received the Victoria Cross and other decorations before emigrating to America;—who wear décolleté shirts, and dress in the most blazé style;—who cover their waiting room walls with framed certificates from every dispensary they ever stuck their noses into, and fill their waiting-room chairs with charity patients as stool-pigeons for others;—who employ "cappers" and "steerers" at the railroad depôts and steamer landings;—who dazzle their callers' eyes with big brass microscopes, and pneumatic cabinets as large as a hotel safe;—who organize clubs for medical treatment, and take obstetrical cases at \$10. each, including nine days' attendance;—who seek appointments to Sons of St. George, Caledonian Societies, Turner-bunds, and Base-ball clubs, as physicians thereto;—in one word the men who are daily prostituting their noble profession, degrading it to the level of a trade, by adopting trade methods in lieu of professional dignity;—these are almost invariably medical immigrants, graduates of foreign medical schools. Not daring to practice such devices at home, they come to our hospitable shores, and with haughty contempt for our generous and free institutions, assume that "every thing goes, don't you know, in America!"

I would propose two remedial measures for these difficulties. The first is a suggestion that the American Medical Association memorialize Congress to institute, establish, and maintain, a *National Medical College* in Washington, for post-graduate special instruction and training for one year, of candidates for the Medical Services of the Army and Navy. That such school be open to all graduates of American Medical Colleges in good standing without regard to age;—that, the final examination passed, its diploma shall qualify for the Army and Navy for those within the proper limit of age;—and for all others shall

qualify for appointments on Pension Boards, the Indian Reservations, the Marine-Hospital Service, Surgeons in the State Militia, Acting Assistant Surgeons in all the services, etc. That all such graduates thereof be enrolled in an "*Army Medical Reserve Corps*," from which alone the government would appoint extra Surgeons in the Army and Navy in case of need, up to certain ages. Such a National Medical school would prove of inestimable value in consolidating and regulating the standards and requirements of our State medical colleges; and by establishing a fixed standard of professional acquirements, would be of great benefit to the people at large, and to the medical profession, without infringing on the rights of the States in educational matters.

Secondly—I would suggest that the American Medical Association proceed, by committee, to endeavor to obtain from England full legal and professional recognition for such of the graduates of our best schools who have evidence of equal preliminary education, and of four years' study before graduation, by showing to the English authorities that our 3-years' course is fully equal to their 4-years' one. This recognition, if obtained, would bind the medical men of the two nations in close bonds of sympathetic union; and do much towards advancing the pan-Anglo-Saxon Confederation which must some day be realized. It would stimulate our second-grade schools to the early adoption of a higher standard. It would make London, instead of Berlin and Vienna, the Mecca of our young graduates; and the resort of our weary practitioners, when seeking to combine relaxation with study in the great world-centres. These men would cross the ocean with lighter hearts if they could feel that as graduates of Harvard, Jefferson, Cooper, Physicians and Surgeons of New York, Bellevue, etc., they could enter the wards of the London hospitals with as much respect from the natives as an L. S. A. receives in those of Philadelphia or New York. Such recognition would enable our Thomases, Da Costas, Pancoasts, Bartholows, Lanes, Senns, Van Burens, Flints, etc., our princes of medicine and surgery, to feel that no suspicion rested upon them, when, as American Professors, they entered the halls of an English college. It would only be a simple act of justice to a national body of men which has done as much for medical science, and scored as many medical and surgical triumphs, as any other body of medical men throughout the world. There is no nation on the face of the earth so ready to do right, or right a wrong, as the English nation, even in the face of national humiliation, as seen in their treatment of the Boers and the Irish. Surely English medical men will prove no less tardy in this respect, if their past errors are shown to them in a clear and self-luminous light!

HYSTERICAL APHONIA, OR PARALYSIS OF THE LATERAL CRICO-ARYTENOID MUSCLES.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY E. FLETCHER INGALS, A.M., M.D.,
OF CHICAGO.

One of the most interesting manifestations of the group of symptoms which make up what is termed hysteria, is paralysis of the adductor muscles of the vocal cords. It is a singular fact in accordance with what might be termed a conservative law of pathological selection, that in nerve trunks not larger than a small knitting needle, in this disease only those fibres are involved which supply the adductor muscles, while adjoining fibres supplying the abductor muscles are not implicated. This is peculiarly fortunate, for otherwise this merely annoying affection would often become a fatal malady.

This affection usually occurs in young women, but is sometimes observed later in life and has been met with even in children. Although termed hysterical, cases are not very infrequent among men.

As the name implies, the disease is usually associated with some form of hysteria, but it sometimes follows violent inflammation of the larynx, in which the congestion disappears but the paralysis remains for some time afterwards. It is occasionally the result of lead or arsenical poisoning; and it has been claimed that exposure to draughts, or even the taking of cold drinks, may in rare instances be the exciting cause. Gerhardt believes that it is frequently of rheumatic origin. I have recently seen two cases immediately following accidents, in one of which there was simply a shock with severe fright, while in the other there was said to have been a fracture of the cricoid cartilage. In this latter the paralysis remained many weeks after all evidences of fracture had disappeared.

Sir Morell Mackenzie states that purely functional aphonia is common in the second and third stages of phthisis, a fact which should cause us to carefully examine the lungs of all patients suffering from loss of voice.

Hysterical aphonia is usually suddenly developed, sometimes shortly after exciting causes which may be easily detected, but frequently these patients waken in the morning to find the power of speech gone, although phonation was perfect when they went to sleep. It is a peculiar characteristic of the affection that often only the voluntary power of phonation is lost, while the involuntary movements, as in sneezing and coughing, remain nearly normal. In these cases the sound in laughing may or may not be lost, as it is more a voluntary act.

On inspection the larynx usually has a normal

appearance, though sometimes moderate congestion and some swelling are present when the trouble has been preceded by catarrhal inflammation. In some instances the cords remain completely abducted and entirely motionless, on attempts at phonation; in others there is a considerable movement, but the edges are not properly approximated, while in rare cases, in which the hysterical element predominates, the cords approximate naturally but no sound escapes. In some instances a large triangular opening is left at the posterior end of the glottis, due to paralysis of the arytenoideus muscle, though the lateral adductors may close the anterior portion more or less perfectly.

There is usually no difficulty in making an accurate diagnosis if the larynx is properly inspected, but there are some cases of acute catarrhal laryngitis in which paresis of the muscles occurs a short time before congestion has taken place, and these, excepting for their history, might be easily mistaken for functional aphonia. In pulmonary tuberculosis the voice not infrequently becomes very weak, or it may be entirely lost. Many of these cases are doubtless functional, as suggested by Sir Morell Mackenzie, but probably some of them are due to impairment of the recurrent laryngeal nerve resulting from the tuberculous process. Mechanical impediments may interfere with proper closure of the cords; for example, swelling of the mucous membrane, neoplasm, or partial or complete anchylosis of the cartilaginous articulations. These, however, can usually be readily distinguished by a careful laryngoscopic examination.

The prognosis as regards time varies greatly. Some cases respond promptly to treatment or even to the first examination so that the patient may leave the physician's office talking naturally after his first consultation. In these cases the symptoms may not return, though usually the attacks recur two or three times before a cure is effected. In others, weeks, months, or even years may elapse before the voice is thoroughly restored, but eventually nearly all cases may be cured. It is important, in the beginning, to assure patients of ultimate recovery but also, at least after the first treatment, to tell them that the exact length of time cannot be predicted.

Many forms of treatment have been adopted, and the most indifferent are occasionally successful. Sometimes with impressible patients even the laryngoscopic examination is all that is necessary. Slightly stimulating sprays, pigments, or powders are beneficial, especially when catarrhal inflammation exists, and they are doubtless useful for their psychological effects. Electrical stimulation of the affected muscles and nerves is advantageous in protracted cases. The most important part of the treatment consists in securing proper hygienic surroundings and diet, and the

administration of simple bitter tonics, or iron, quinine, arsenic, and strychnia. The last in full doses has seemed to me of more value than all the others. I believe that delay in effecting a cure often results from our timidity in the administration of this powerful nervous tonic. In the majority of cases the common doses of one-thirtieth or even one-twenty-fourth of a grain of sulphate of strychnia have little or no influence on the disease. These patients seem particularly tolerant of this remedy and often experience no physiological effects until heroic doses are resorted to. This is happily illustrated in one of the cases which I am about to report. In using electricity I prefer the static variety applied externally. Next to it I value the faradic current, and lastly the galvanic. Either of the latter may sometimes be successfully employed externally, but in obstinate cases at least one electrode should be applied within the larynx directly to the affected muscles. When the paralysis is of long standing, and the muscles consequently partially atrophied, this latter course seems to be especially desirable. It is unnecessary for me to say anything regarding the mode of administration of quinine, arsenic, and iron, but I wish to call your especial attention to the use of strychnia in large doses. This remedy should be given at first in small doses but these should be steadily increased until its physiological effects appear. I begin with one-thirtieth of a grain three times a day, and have the dose steadily increased from day to day or every second or third day, usually by the addition of one-sixtieth of a grain once, twice or thrice daily until the 24th, 20th, 18th, 15th, 12th, 10th, or even 8th of a grain is taken three times a day. It has been a surprise to me that most of these patients will take one-tenth or one-eighth of a grain three times a day before any of the constitutional effects are manifested. I tell the patients what they are taking and what physiological effects may be expected, and then instruct them to reduce the dose or discontinue the use of the remedy as soon as these appear. It would undoubtedly be safer to prescribe these large doses in solution, but owing to the intense bitterness of the drug it is difficult to get the patient to take it regularly in this way, therefore, when the digestive organs are in fair condition I have risked either the small gelatine-coated pellets or freshly prepared capsules, but owing to the varying degree of solubility of the gelatine, I think the tablet triturates might be preferable. I have no fear of the so-called cumulative effects of the drug. It may be given alone or in combination with other remedies. I have had several cases in which from one-tenth to one-eighth of a grain had to be given three times daily, before the slightest constitutional effect could be detected. And until these occur but little benefit has been experienced. As soon as twitching or stiff-

ness of the muscles or intense nervousness is noted, the dose should be reduced to that taken one or two days previously, and afterward, owing to the increased susceptibility of the nervous system, it may be necessary to still further diminish the quantity from time to time, but the remedy must be continued in doses as large as can be borne for several weeks in order to prevent recurrence of the attack. The necessity for this is well illustrated in one of the cases that I am about to report, where it was not difficult to restore the voice but in which it was found impossible to maintain it for any length of time, until the heroic doses of strychnine were adopted.

While this course of treatment has been attended by the happiest results, I must urge those who try it to watch the effects carefully and to be sure that the drug is properly dispensed.

From many histories which I have of private patients affected by this disease, I have selected five which I think will be of special interest.

Case 1.—E. T. A., male, æt. 39. The patient came to me with a history of having lost his voice about three weeks previously while suffering from a bilious attack which immediately followed a sore throat from an ordinary cold. His father had died from throat trouble and a paternal uncle had been obliged to give up preaching from a similar cause. The general health was reported as good as normal but the patient did not have a robust appearance. He could only speak in a whisper.

I found on attempted phonation that the left cord remained in the cadaveric position, but the right was brought within about two millimeters of the mesian line. There was no congestion or swelling of the larynx. I used the static current externally and found that the patient was able to articulate quite distinctly at the time, though he resumed his whispering voice immediately afterward. I ordered strychnia sulphate one-thirtieth grain three times a day. Five days later the voice was much better. The strychnia was then increased to one-fifteenth grain and static electricity was repeated. Two days afterwards he was not quite so well. At this time I ordered quinia and iron in medium doses, continued the strychnia and repeated the application of electricity. Five days later—voice a trifle better but larynx appeared the same,—applied the faradic current by an endo-laryngeal electrode. Patient saw me four or five times afterward at intervals of four or five days when essentially the same treatment was pursued but the strychnia increased to one-tenth grain. He then left the city for a few weeks and on his return, four weeks later, I observed that on attempted phonation the left cord was crescentic but remained at the side of the larynx, and the right cord passed about four mm. beyond the mesian line leaving a chink about three mm. in width. He was not treated

frequently but the strychnia was continued in doses of one-tenth grain three times a day for about six weeks; making, in all, about four weeks during which he took one-fifteenth grain of strychnia three times a day, and ten weeks in which he took one-tenth grain three times a day; but he never felt its physiological effects. He then stopped taking medicine and for a couple of weeks patronized one of the popular superstitions of the day (Christian Science). After ten days of this, his voice returned and five days later was as good as ever. I examined his larynx six weeks later, at which time he said the voice was natural. I found the left vocal cord paralyzed in the cadaveric condition, slightly crescentic in outline. On phonation the right cord passed over to the left side nearly meeting the paralyzed cord so as to leave a chink not more than a mm. in width.

This case is of special interest from the probability that functional paralysis of the right cord was superadded to permanent paralysis of the left, the latter having never attracted the patient's attention. Of course there is no absolute proof of this condition but from the voice having been weak before the aphonia and from the fact that the paralysis of the left cord continued six weeks after his voice was regained and seemed to him normal, the conclusion seems justifiable.

Case 2.—O. H. J., male, æt. 38. This patient came to me from Wisconsin, in the early part of February, with the following history: About three weeks previously he had an attack of influenza, and after five days suddenly found himself unable to speak. The next morning he was able to talk aloud for about an hour when his voice again left him. The following day he had the same experience, but after that he had been unable to speak louder than a whisper up to the time of consulting me. He was not nervous, he slept well, his appetite and digestion were good, and he had the appearance of perfect health. The vocal cords were of normal appearance but did not move when I asked him to phonate. I applied static electricity externally over the larynx, directing him at the same time to pronounce the letter A, which he did aloud and distinctly. There was no return of the aphonia. He was given strychnia to be taken a few days in doses of one-twentieth of a grain three times daily. Four days later he returned to his home perfectly well.

This case illustrates the rapidity with which some of these can be cured.

Case 3.—M. F., æt. 20. This patient came to me from Michigan, with the following history: Eleven weeks previously in an accident his head was thrown violently backward in a way that caused some injury to the larynx. He had found himself unable to speak after the accident. Dr. Parks, who saw the case sometime afterward,

said there had been a fracture of the cricoid cartilage. When the patient came to me he was apparently in perfect health but could not speak excepting in a whisper. He coughed aloud, but said there was no sound when he attempted to laugh.

Upon a laryngoscopic examination, I found the larynx and trachea normal. The cords were closely approximated during attempted phonation but no sound was emitted. There seemed no reason for loss of voice excepting lack of effort upon the patient's part. No treatment was instituted as the patient had merely been sent to me for examination.

Case 4.—Miss W. A., æt. 23. This patient came to me from one of the central cities of Illinois, with the following history: During the previous years she had lost her voice sixteen times but had each time soon recovered it. The present attack of aphonia she attributed to having been thrown from a buggy four weeks previously, since which time she had been unable to speak louder than a mere whisper, though she coughed and laughed aloud.

Upon directing her to speak while I made a laryngoscopic examination, I found she could easily sound aloud the letter A, but ordinarily the vocal cords upon attempted phonation left a space about two mm. in width between them. I applied static electricity to the larynx directing her to sound the letter A during the application. This she did two or three times but immediately resumed her whispering. About an hour later her voice returned and remained for about twenty-six hours when it was again lost. She suffered from insomnia, was despondent, and complained of being continually tired. She was given sulphonal which acted well in producing sleep, and strychnia, iron and quinia with other tonics for her general condition. From this time on she visited my office about every second day for seven weeks, and at nearly every treatment her voice was restored, but it would fail again after a few hours. I then began to increase the dose of strychnia, and in nine days I had raised it from one-twentieth of a grain three times a day to one-tenth of a grain four times a day. While taking this quantity, when her voice was restored it did not again fail. About two weeks later the strychnia had to be diminished to one-tenth of a grain three times a day because it caused slight twitching of the muscles of the eyes. She was now feeling more cheerful, had a fair appetite, slept very well, and did not complain of the constant weariness which had troubled her so long. Her voice remained permanent. Two weeks later the strychnia was reduced to one-fifteenth grain three times a day and she returned to her home apparently perfectly well. She has recently written me that she again lost her voice about three weeks later, that is, seven weeks

after it had last returned. I advised her to again increase the doses of strychnia.

This case illustrates the difficulties that will be met in obstinate cases, and shows clearly that in some of these there is really no paralysis, but simply an insufficient effort on the patient's part.

Case 5.—Miss D. M. D., æt. 29, came to me with the following history: Six years previously while suffering from an attack of pneumonia she had become hoarse and remained so for two days. The morning afterward she found herself unable to speak excepting in a whisper, and her voice had never since returned. Her grandparents and parents were long-lived, but a brother and sister were said to have had consumption. She had twice suffered from pneumonia.

I found her general health good, though she was not very strong. She complained of some pain in the right mammary region and of some shortness of breath on exertion, with an occasional attack of cough at night. The appetite was fair, and digestion normal. Pulse 100. There was no fever. She could talk only in a faint whisper. She complained of some pain in the larynx when swallowing, and of a sense of dryness or tightness with considerable pain after having had to talk for any length of time. The cords were of a light pink color and did not approximate closely, a chink of about three millimetres in width being left on attempted phonation. I ordered a tonic pill of quinia, iron and strychnia, and applied static electricity over the larynx. Subsequently the faradic current was applied to the cords from time to time. The patient continued to take the internal remedies, but only visited me at irregular intervals during the next eleven months, when I find it noted that she had much improved, and was frequently able to speak a few words in a loud voice. Six weeks later, she could talk in an undertone the greater part of the time, and three months afterward she was able to talk aloud all of the time, though not with a very intense voice. At this time the cords were properly approximated during phonation. I noticed in this case that the ventricular bands always closed before the true cords on phonation. Eighteen months after the beginning of treatment she was able to talk aloud.

In this case the aphonia had persisted for six years before the patient came under my care. She was treated on an average of two or three times a month for eleven months before any decided improvement could be observed, then she began to speak a few words at a time in an undertone. I did not see her again for three months, but under the persistent use of comparatively large doses of strychnia (as large as she could take without twitching of the muscles) and small doses of quinia and iron, her voice steadily improved until at the end of eighteen months from the beginning of the treatment, she was pronounced cured.

A NEW OPERATION FOR PROLAPSUS OF THE ANTERIOR VAGINAL WALL.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY ANDREW F. CURRIER, M.D.,
OF NEW YORK.

With the exception of vesico-vaginal fistula the lesions of the anterior vaginal wall are more or less ignored by the majority of the profession, or if not ignored are considered of less importance than they actually are. Especially is this the case with prolapsus, which may exist alone or in connection with descent of the bladder, uterus, posterior wall or rectum. Prolapse of the vagina does not necessarily signify prolapse of the bladder and rectum, and errors of diagnosis in this direction are frequently made through examinations which are not sufficiently careful. In either case the vaginal lesion demands operative treatment, but the symptoms are usually much more urgent if rectum or bladder has descended than when this is not the case. The vaginal wall is one of the means by which the weight of the bladder is sustained and such portions of the intestines as may be superimposed, and the medium through which the resultant of the forces exerted by the contraction of the abdominal muscles passes. The structures of the pelvic floor may be so disorganized as to be of little value as a means of support, but if the integrity of the anterior wall is preserved the latter may act as an efficient barrier and support for a long time.

The causes which lead to prolapsus of the anterior wall are not limited to the parturient process either directly or indirectly. The lesion may occur in the young and nulliparous in connection with general relaxation of muscular fibre; it may be the consequence of straining at stool in connection with persistent constipation, or it may occur in the aged in connection with general atrophy of the muscular tissue. A prolonged second stage of labor with subsequent imperfect involution may be its efficient cause, or it may occur in women who have had a number of pregnancies in rapid succession, and in whom the conditions of life and health have been such as to preclude complete involution.

It has two types: In one there is atrophy of muscular fibre and diminution in the thickness of the entire structure, there is also protrusion of the bladder and disturbance of its functions, especially in those cases in which there is coexisting cough or constipation. In the other type the mucous membrane of the vagina is thickened and its connective tissue hypertrophied, but there is no protrusion of the bladder, though there may be extensive prolapsus of the vaginal wall.

The object of an operation on this structure is to restore it so that it may accomplish its normal functions. This implies restoration of normal dimen-

sions longitudinally as well as laterally. Operations which have heretofore been devised have tended almost exclusively to contract the wall only in its lateral or transverse dimensions, the old operation of Dieffenbach being the type of such procedures. The vagina is thus made narrower but also somewhat longer, and the great strain which is placed upon a long line of union is not infrequently sufficient to rupture it and restore the former diseased condition in an exaggerated form. The method of Emmet of burying a quantity of undressed tissue beneath his line of union seems irrational, for while this tissue may atrophy it may also suffer decomposition. It also imposes a great strain upon a narrow line of union, a strain which it will not bear in all cases, as experience shows.

The operation which is proposed as a substitute for previous methods aims to contract the vaginal wall to a sufficient extent both in length and breadth, and to distribute the tension over two lines of union at right angles to each other. It was demonstrated before the Obstetric Section of the New York Academy of Medicine in January of this year, and on several occasions before the class at the New York Post-Graduate School and Hospital. I have thus far performed it three times, in each case before the class of the last named institution. The conditions differed in every case and in all of them the results have been entirely satisfactory. The operations were performed in December, 1889, January and March, 1890. All the patients have been seen within a few days, and there is as yet no indication in either case that the benefit derived from the operation will not be permanent.

In performing the operation, an elliptical strip of mucous membrane of sufficiently large area is first removed from the anterior wall as in the Dieffenbach and other operations, and then another elliptical strip at right angles to the first, the major axes of the two ellipses intersecting at their middle point. This tissue is best removed with forceps and scalpel, and in favorable cases, the outline of the ellipses having been made by suitable incisions, the tissue can be unrolled or torn off upon a tissue forceps with broad grip. I have had one made for this purpose. In cases in which there is protrusion of the bladder the dissection must be made with great care to avoid wounding that viscus. The hæmorrhage is sometimes considerable, for the bladder wall is very vascular, but it is mostly venous and stops as soon as the wound is closed. Catgut is used in closing the wound, No. 2 or No. 3 being used according to the thickness of the mucous membrane. Continuous sutures are used and they are buried in the connective tissue if that is thick enough to warrant it, otherwise the suture is carried directly from edge to edge of the wound, the needle entering and issuing from the mucous membrane about $\frac{1}{8}$ of an inch from the edge. A

fine slightly curved needle is used about $1\frac{1}{4}$ inch in length. That portion of the wound nearest the cervix is first closed, the suturing being continued as far as the junction of the longitudinal with the transverse ellipse. Then, with another needle and suture, the portion of the wound nearest the meatus urinarius is closed, the suturing being continued as far as the junction of that portion of the longitudinal with the transverse ellipse. Then, in precisely the same manner as before, the transverse segments of the wound are closed, and the two sutures are finally tied together at the middle point of the entire wound. The result is that the vagina is narrowed and also shortened to the desired extent and the tension is evenly distributed over two lines of union which cut each other at right angles in the middle point. The wound may be painted with iodoform colloid or left without any dressing whatsoever. The patient must lie quietly upon her back for a week, and by that time the wound will almost certainly be firmly healed, for the conditions of drainage are all that could be desired, and the vascularity of the parts is ample. If the patient suffers from severe cough the operation should be deferred, for the strain upon the wound induced by coughing may be sufficient to tear out the sutures. In one of my cases the coughing was intense and harassing, but the result has been all that could be desired. I would be unwilling, however, to take such a risk again.

FUNCTIONAL NERVOUS DISEASES OF REFLEX ORIGIN.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 21, 1890.

BY ALBERT RUFUS BAKER, M.D.,

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If one-half that is claimed by Dr. George T. Stevens be true,—viz.: That nearly all headaches, neuralgias, almost all cases of chorea, and 50 per cent. of all cases of epilepsy are due to incoördination of muscles of the eyeball, the subject is one of momentous importance to every general practitioner of medicine, as well as to the surgeon and specialist. That there is a grain of truth in his observations, I have no doubt, but it cannot be separated from the chaff by positive declarations pro and con, without first being investigated by impartial, unprejudiced careful scientific observers.

The position Dr. Stevens occupies in New York is an anomalous one; if I am correctly informed he went there a comparative stranger, a few years since, from Albany where he enjoyed a fair, local special practice. Although he had been a regular contributor to the medical periodicals his reputation was not such as to gain him the

immediate confidence of a large number of specialists or general practitioners in New York City. His contributions were mostly on the subject of muscular asthenopia, and eye strain, but were not given much serious consideration until after the publication of his book on "Functional Nervous Diseases," which was awarded the first prize by the Belgian society. Instead of candidly investigating the merits of the subject, many of the leading ophthalmologists and neurologists passed sentence upon his work, declaring his statistics to be manufactured and his conclusions preposterous; but notwithstanding this verdict, Stevens continued to read papers before the medical societies, and to contribute articles to the medical journals until a few physicians became at least partial converts to his views.

About two years ago, the New York Neurological Society appointed a committee to investigate the claims made by Stevens, as to the possibility of curing chorea and epilepsy by correcting ocular muscular defects. It was decided by the committee which consisted of five neurologists and general practitioners and two ophthalmologists, that the cases of epilepsy and chorea should be first examined by the committee, and the history and present condition recorded. The case should then be submitted to Dr. Stevens for treatment, and examined by the committee again before reporting the results to the society. Only fourteen suitable cases were submitted for treatment: five of chorea and nine of epilepsy. Of these cases six were reported as improved, seven unimproved, and one unknown. Notwithstanding the committee express the opinion that the "method of Dr. Stevens does not afford a sufficient degree of relief to warrant its adoption or recommendation to the members of the Neurological Society as a means of cure," the results are certainly as good if not better than those obtained by other methods of treatment.

The November number of the *Journal of Nervous and Mental Diseases*, is devoted entirely to the discussion of the subject. The position of Dr. Stevens is somewhat similar to that occupied by Dr. Horace Green in 1857, before the New York Academy of Medicine, before which he demonstrated the possibility of intra-laryngeal treatment; which resulted in the split of that society, the resulting wounds of which have only recently been healed; and no doubt well remembered by many of the older members of this society.

The subject of peripheral nerve irritation is an old one. It is now conceded that many headaches are due to nervous disturbances as the result of errors of refraction. Facial neuralgia from diseased teeth is of common occurrence. We may also mention the bowel troubles so common in children as the result of dentition. Ear cough is another illustration of the frequent oc-

currence of functional nervous disturbance from peripheral nervous irritation, and was given much attention by the older writers one of whom, wrote a large book on this subject, in which he demonstrated to his own satisfaction at least, that vomiting, vertigo, cough, paralysis, insanity and nearly all kinds of laryngeal disease was due to the irritation caused by plugs of wax in the ear.

More recently it has been claimed that asthma and many other respiratory neuroses are due to peripheral irritation as the result of nasal obstruction. We may also mention the intestinal irritation of worms, and that due to fissure and fistula of the rectum.

"Genital irritation was urged at one time by a distinguished surgeon as a cause of paralysis of the extremities, and for a time circumcision was regarded as a necessary preliminary procedure indispensable in the treatment of many nervous diseases, among which infantile paralysis and spastic paraplegia may be named. Later the influence of congenital stricture of the urethra was brought forward as a cause of many neuroses and of temporary states of nervous excitability; and not long after, the claims of the genital organs of women rose in the estimation of the profession as fertile sources of nervous disease."¹ Other familiar examples of nervous phenomena of reflex origin are the vomiting of pregnancy, pain in the knee, from morbus coxarius, pain in the penis, from irritation of stone, etc.

These are among the more common functional diseases of reflex origin, and every practitioner of medicine could make additions of unusual cases from his own experience. The essayist reported a case some years since, in the *Medical Record* of a young girl whose hair on the top of the head did not grow over an inch in length, but which grew naturally after correcting an error of refraction with spectacles. Recently he met a case of sudden deafness as the result of acute inflammation of the Eustachian tube in which there was complete aphonia, and the boy only began to speak slowly after the hearing was fully restored. A few years since he was consulted by a woman with a plug of wax in the ear, and a bald spot on the side of the head as large as the palm of the hand; after the removal of the wax the hair grew again. A case of epilepsy has been reported as the result of polypus in the ear and cured by its removal.

These illustrations of unique cases of functional nervous diseases of reflex origin might be continued indefinitely; but these observations will serve to call your attention to the broad field which the subject covers.

Other phenomena of frequent occurrence are giddiness, vertigo, and vomiting; all of which have an intimate relation with eye strain, and are due to two causes: first, to the efforts necessary

¹ Starr, Medical Record.

to properly adjust the muscles of the eyeball in binocular vision; and second, to the muscular efforts made in accommodating the eye for objects at varying distances. Both these factors must be taken into consideration in every discussion of this subject. And here I believe is the weak point in nearly all the observations of Dr. Stevens and his followers. They have attributed all the functional nervous disturbances to the insufficiency or spasm of the muscles which move the eyeballs, and have almost entirely ignored the accommodation in the production of these functional neuroses. I believe that nearly all the troubles we have with the muscles of the eyeball are due to, and are the direct outgrowth of the errors of refraction. This is generally recognized in cases of hypermetropia as a cause of strabismus.

In most cases of muscular asthenopia we have the same excessive nervous stimuli sent to one pair of muscles that we do in strabismus, and those patients who have not sacrificed binocular vision, consequently suffer from pain and other nervous disturbances, due to the conflicting efforts at accommodation on the one hand; and those of convergence on the other. It has been my experience not infrequently in cases of errors of refraction that after correcting the ametropia, to find, that while I had relieved the pain due to the efforts at accommodation, I had disturbed the equilibrium that had become established between the efforts of accommodation and those necessary for perfect binocular vision, and thus set up a train of symptoms almost, if not quite as annoying as those from which the patient suffered before. If the limits of this paper permitted I would be pleased to report a number of cases illustrating this point.

It is in the knowledge of this subject gained only by a large practice that the oculist who has had a wide experience, excels the beginner, and this is the reason why so often spectacles that are theoretically correct are rejected by the patient.

The dizziness which results from looking at a rapidly moving train of cars, while swinging, or from looking over a precipice, is due to the same excessive muscular efforts made necessary for the proper coördination of the eyeballs, and those of accommodation. The frequent instruction of stewards on board steamships to the passengers to keep their eyes shut while making their toilets and until they reach the deck, to prevent seasickness, is a practical illustration of this principle. The most essential factor in the cause of sea-sickness is due to the muscular efforts made necessary on shipboard in viewing objects at varying distances.

Persons suffering from astigmatism are peculiarly liable to giddiness and vertigo, undoubtedly due to these unusual muscular efforts. An astigmatic patient of mine, could not sew on striped goods; and was frequently caused to vomit while

ironing such goods. Another said the mere mention of a barber's pole always caused a squamish sensation at the pit of his stomach. Another if walking behind a person with a striped dress on the street was always obliged to close his eyes or look in another direction to prevent falling. These cases were all cured by correcting the error of refraction. A statement made by an eminent oculist that if we, like the giant Cyclops, who assisted Vulcan in his workshop, had but one eye in the centre of his forehead, would not suffer from muscular asthenopia, is not strictly true, because we not infrequently meet persons who have but one eye, (or what is more frequent who use but one) who suffer from reflex nervous disease due to eye strain.

It is necessary, in order to secure binocular vision, to have the eyes so adjusted, that rays of light coming from an object are focused upon corresponding parts of the retina. For perfect vision it is necessary that they are focused upon the fovea centralis of each eye. The delicate muscular arrangement, which is necessary for changing the focus of one eye for near and distant objects is a complex one; but to keep both eyes fixed on objects at varying distances is much more so, and it is not difficult to understand how muscular disturbances might follow as the result of errors of refraction; or even in cases of emetropia in which unusual or prolonged work is demanded of the eyes.

Dr. Noyes says, "the acquisition of binocular vision belongs to the first months of life. Young infants roll their eyes about in the most inconsequential fashion, and when their visual vagaries give place to binocular fixation an important step has been gained in ocular and cerebral development. In some subjects this function is never acquired, in others it may be lost after having presumably been acquired. All cases of permanent strabismus are instances of suppressed, or of lost, or of undeveloped binocular vision."

Muscular insufficiencies is one of the most difficult parts to master of the entire subject of ophthalmology. The diagnosis is always difficult, and usually requires repeated examinations. It is not sufficient to correct manifest defects as revealed by the von Graefe test, but we must seek after masked insufficiencies of the ocular muscles as we do for masked errors of refraction by the use of atropia. Unfortunately we have no such reliable means of solving the former problem as we have the latter, by paralyzing the accommodation.

The most satisfactory discussion of this subject with which I am familiar is a paper by Dr. Noyes, entitled, "On the Tests for Muscular Asthenopia, and on the Insufficiency of the External Recti Muscles," which was presented to the Eighth International Medical Congress at Copenhagen, six years ago. It is exhaustive, scientific, based

upon a large number of cases, readily comprehended, and no list of outrageous new names to be remembered, such as heterophoria, orthophoria, esophoria, exophoria, hyperesophoria, etc., as are found in Dr. Stevens' work. On the whole, this contribution of Dr. Noyes is so much in advance of Dr. Stevens' book, both in time and every other commendable feature, that I have often wondered why Stevens is securing all the credit for work that was done so much better and earlier by Noyes.

It is necessary, in making these examinations, to find the amount of abduction and adduction both for distant and near points. In order to make these tests valuable it is necessary to have some physiological standard of adduction and abduction for comparison. A valuable contribution to this subject is given by Dr. H. S. Shell in the *American Journal of Medical Sciences*, October, 1878. He gives one table of twenty emetropes whose adductive power at the distance of 20 feet varied from 20° to 40° , and their abductive power varied from 4° to 16° ; the average was for adduction, 29° ; for abduction, $8\frac{1}{4}^{\circ}$; the average ratio between them was as 100 to 28. It is difficult to determine what is the ordinary condition of the muscular apparatus for the individual, as what is the normal condition for one is abnormal for another; and for this reason repeated examinations are necessary, and they must be made with the most consummate care, or the most unfortunate mistakes will be made. Usually those whose adductive power is less than 8, and whose abductive power is over 28, may be assumed to have insufficiency of external recti muscles; and one whose adductive power is less than 28, and whose abductive power exceeds 9, may be assumed to have insufficiency of the internal recti.

This test of the muscular power I believe to be of more value than the equilibrium test of von Graefe. Some years since I instituted some tests as to the state of the muscles in persons who had normal vision. I found that only about one-half of those examined had perfect muscular equilibrium. Dr. Roosa, who has recently repeated these investigations, found that out of 103 subjects examined only seventeen were found to have muscular equilibrium. Rather a low percentage, I think. But of several hundred cases with *refractive error* in which I tested the muscular power, I found even a less number in which there was perfect muscular equilibrium.

It has been my practice for a number of years in all cases of muscular asthenopia in which the muscle at fault could not be readily determined, to resort to the use of atropia. This will reveal any latent error of refraction which may be the unsuspected cause of the asthenopia; but even though there be no error of refraction it puts the eye at rest, allays muscular irritability, and the investigation can be pursued with much greater

ease and the results will be much more uniform.

The use of prisms for the correction of muscular insufficiencies on the whole, I have not found as valuable as I was led to suppose they would be from *a priori* reasoning. Nevertheless they are of very great benefit in many cases. They seldom can be worn stronger than 2° or 3° for each eye, but even in cases where the muscular defect is greater than this amount the comfort to the patient is very considerable. During the first twenty-four hours more or less discomfort is suffered, the patient has some uncertainty in judging of distances, and experiences some difficulty in walking, especially in ascending and descending stairs; but after the eyes become accustomed to the new adjustment the relief is very marked. If the prisms afford any permanent benefit the question of tenotomy ought to be considered.

The result of operative interference, if judiciously performed, is always more satisfactory than the wearing of prisms, which at best is only a poor crutch to lean upon for a time, and permanent cures can only be attained in many cases by making tenotomies.

As to the relief of headaches my experience would lead me to believe that a large number that can not be cured by correction of the error of refraction alone, can be relieved by the use of systematic muscular exercise, by prism, by tenotomies, or by a combination of all these methods. The same may be said to a limited extent of some cases of neuralgia, neurasthenia, chorea and epilepsy. But it is to be remembered in all these cases there is a neurotic temperament, that predisposes these patients to some form of neurotic disease. The peculiar form the disease may assume is often due to accidental causes, and this is the reason that when you cure these patients of one affection you are almost sure to have another follow, possibly in a distant organ. And thus it is that the oculist is reaping an abundant harvest from the fields already gleaned by the gynecologist, who has sewed up all the lacerated cervices, and repaired all the damaged perineum until the chastest maiden might envy the comely appearance of the genitalia of the most prolific matron. It may be true that these patients are relieved of side and back aches; it may be that their constipated bowels or irritable bladders perform their function better; yet these patients still suffer about the usual amount of pain and discomfort in the course of the year although it may be transferred to the head or eyes.

I am not prepared to state just what this neurotic habit is, but we are all familiar with its manifestations. With one it will be manifested by recurring attacks of sick headache; in another by a paroxysm of asthma or hay fever; in the female by painful menstruation or hysteria, and in others it may manifest itself as neuralgia, chorea or epilepsy. We specialists may lop off

a branch here and there, and we may be of real value to our patient in relieving him of some troublesome or painful symptom, but there is something more necessary—the patient needs treatment more than this or that annoying symptom. Let us then not ignore the general practitioner in his more responsible duty of correcting the general condition, which after all is the real cause of these nervous diseases of reflex origin.

DR. SCHWINITZ did not wish to discuss graduated tenotomies and their effect on so-called reflex neuroses. He wished to point out that the mere correction of a local irritation was by no means sufficient to obviate the nervous explosion supposed to be caused by the defect, because the lack of the control of the higher centres over the lower reflex mechanism, which is really at the bottom of the trouble, is not thus restored. The inference was plain that this must be treated by general measures.

He drew a comparison between the refraction of the eyes and equipoise of eye-muscles of choreic children and those of children not choreic, and showed that they were closely similar. He stated his belief that correction of the ocular difficulties was often followed by disappearance of the chorea, which, however, was liable to return, especially in the "chorea months," if the child was exposed to the same environment which was present at the original onset.

DR. LEARTUS CONNOR, of Detroit, Mich., said: In a careful study clinically of numerous cases during several years I have reached certain results: (1) Most cases with heterophoria accompanied by disturbances of the nervous system are relieved by a correction of the optical defects, plus a lowered state of the general constitution. By such a course most persons were entirely relieved, the eyes remaining in so perfect equilibrium as to warrant no further interference. (2) A very few cases were not so relieved and a tenotomy performed. Partial tenotomies were unsuccessful, and a complete tenotomy was finally performed. (3) Occasional cases are relieved by the use of correcting prisms; but generally they are simply temporary expedients. (4) The recent discussions of this subject have placed in our hands a means for meeting the needs of certain cases more satisfactory than we previously possessed.

DR. EDWARD JACKSON: The point that these conditions known as reflex neuroses are due to lack of control in the higher centres, is of sufficient importance to be emphasized. There are certain facts that emphasize it. In some cases, when no heterophoria is revealed by covering one eye, it still appears on using the diplopia test, indicating that the position of the eyes is thus shown to be not one of rest, but of a special action. The power of other muscles to adapt them-

selves to requirements made of them, if they receive proper innervation, would indicate, by analogy, such power on the part of the ocular muscles, and this is supported by experience in the performance of tenotomies for heterophoria.

DR. HORTZ wished to correct the statement that Stevens disregarded the effect of refractive errors on the nervous system, and only regarded muscular disturbances as a cause of functional nervous diseases. In his book and his journal articles Dr. Stevens has emphasized the importance of always first correcting errors of refraction. He gave tables showing the frequency of refractive errors alone producing headache, etc., which were relieved by correcting the ametropia. All oculists recognize the accommodation strain as a frequent cause of headache, and oculists have also always admitted that nervous symptoms can be produced by strain of the ocular muscles. The fact has never been denied, and the only question is to what extent and how frequently muscular strain is a cause of nervous disorders. It is a common occurrence that a man who is successful with a new mode of treatment is carried away by his enthusiasm, and so it may be that Dr. Stevens' claim may not be sustained by experience to its full extent. But whatever the verdict of the future may be, it will always give him credit for having widened an important field of investigation, for having directed our attention to the fact that difficulties in binocular fixation arise from other than the internal recti muscles more frequently than was ever thought of, and particularly that deviations of one visual line in the vertical plane occur and are a source of the most distressing asthenopic symptoms. The doctor here gave the history of a case of asthenopia which had received no benefit at all from the correction of a low degree of hyperop. astigm., though glasses had been used for four years. The correction of a slight degree of hyperphoria removed all asthenopic and nervous troubles, and the relief has been permanent since over two years, even though the patient has dispensed with her glasses. That many persons with heterophoria are not troubled with headache or other nervous symptoms, is no argument against the doctrine, for with the same logic you might deny the relation of hyperametropia to accommodative asthenopia because not every hyperametropia is troubled with it.

DR. MINNEY: I believe Dr. Stevens' claims are founded upon physiological principles, but his enthusiasm has carried him to the extreme. A case of mine was operated on for insufficiency by the doctor, and the patient thought she was cured. She cannot, however, use her eyes continuously. The operation has acted as a placebo, and with the care she has learned to take of her eyes she can use them longer; but I do not think it is due to the operation.

DR. BAKER, in response to Dr. Hotz, said that he did not intend to convey the impression that Dr. Stevens did not correct errors of refraction, which he does most thoroughly; but he protested against his giving all the credit to the results of an imaginary operation, and ignoring the benefit derived from the use of spectacles.

A CASE OF SYMPATHETIC OPHTHALMIA TWO WEEKS AFTER ENUCLEATION OF THE INJURED EYE.

Read in the Section of Ophthalmology, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY GEO. H. GOODE, M.D.,
OF CINCINNATI, O.

The patient whose history I report was a boy 11 years of age. He was injured in a quarrel with another boy on the third day of last October, and was brought to my office immediately after the injury. He had been struck by a rock the size of a man's fist, and from the absence of any marks on the face must have received the full force of the blow in the eye. Examination showed a complete vertical rupture of the cornea and a slight extension of the wound into the sclerotic below. Exactly to what extent the contents of the globe had suffered it was impossible at the time to determine. The serious nature of the injury was explained to the friends, and the mere possibility of retaining the eyeball, though shrunk, was placed before them; while the probable necessity of its removal at any future time was impressed. The wound being free from anything which might retard its union, the course of treatment was an expectant one. The boy seemed to get along fairly well for a few days, there being very little inflammatory reaction. There was nothing further done for two weeks, but "waiting and seeing" what developments would take place. About that time the eye was quite painful to touch, and the prospect for a speedy subsidence of the inflammation was not very flattering. There was nothing in the condition of the uninjured eye to cause alarm, but nevertheless I advised the removal of the damaged eye, in order that the boy might be able to return to school, and especially that all future danger might be obviated. However, had I had more confidence in the friends giving the case the attention it needed I might have continued my efforts a little longer to save the injured eyeball.

The mother desiring a consultation, Dr. Robert Sattler was called, who advised the removal of the injured eye; which I did on the following day. There was nothing about the operation out of the ordinary, except that the corneal wound, which had not firmly closed, ruptured and rendered the enucleation a little more difficult. This being done, I felt that I could safely assure the

mother that the boy had escaped the danger of future trouble. I, too, felt responsibility lifted from me, and little thought that the case was to prove one of the rare exceptions to the rule. Treating this case as any other after such an operation, after a week had elapsed, as there was nothing further to be done but await the proper time for the wearing of an artificial eye, I dismissed him temporarily. I was therefore surprised to see the boy return to my office at the end of the second week, with what his mother called "a cold in the right eye." I did not agree with her in her diagnosis, but recognized the fact that he had a well-marked iritis. A mydriatic produced an irregular dilatation of the pupil. After a short continuance of the atropine the synechiæ were relaxed and the pupil dilated *ad maximum*. The posterior surface of the cornea was, too, partially studded with punctate deposits, so that the inflammation seemed to be of a sero-plastic nature. The ophthalmoscope revealed nothing. Vision was reduced to $\frac{2}{40}$. An examination of the stump of the enucleated eye showed nothing—there was no tenderness, nor was there any contraction. As there was no increased tension, atropine was continued, leeches were applied and hot water applications made. Under this course of treatment the acute inflammatory conditions subsided, and after some weeks the eye assumed externally a normal appearance with the exception of still a hazy appearance of the posterior surface of the cornea. This condition gradually improved and all external manifestations disappeared, so that the chances of a speedy recovery were hoped for. It was only a short time, however, that I was again called to see him. This was some time in February. After pursuing the same course of treatment as before, he again improved, and since the first of April has visited my office occasionally to be under observation.

At the present time his vision is only about $\frac{3}{40}$. Had I not examined the vision of this eye before there was any trouble and found it $\frac{2}{40}$, I might account for the defect as being due to congenital amblyopia. The ophthalmoscope shows no lesion sufficient to account for the diminution. I am, however, still in hopes that the vision will improve.

MEDICAL PROGRESS.

WEIGERT'S HOT AIR METHOD IN PHTHISIS.—A recent discussion led by NYKAMP, in which Rieth, Lazarus, Frankel and Rosenfeld took part (*Allg. Wiener Med. Zeitung*), seems to have effectually disposed of Weigert's method as a therapeutic procedure. It was claimed that, owing to the dryness and heat of the air, there was a marked increase in the congestion of the mucous membranes, the cough was aggravated, and this

tended to excite hæmorrhage; further, that the temperature of the air in the alveoli was not raised, owing to the free evaporation from the moist surfaces. This Nykamp claims to have experimentally shown by a thermometer placed deeply in the pharynx, that air inhaled at a temperature of 265°C ., when it reached the pharynx had a temperature of but 55°C . It was found that a thermometer placed just beneath the vocal cords of a dog only registered 37.3°C ., while the animal was inhaling air with a temperature of 190°C . From these facts the conclusion is reached that Weigert's method does not destroy the bacilli, as it cannot materially increase the temperature of the air entering the alveoli. Its only benefit, the respiratory gymnastics, may be secured by more convenient and safer methods.

RESORCIN IN DIPHTHERIA.—DR. ANDEER (*St. Petersburger Med. Wchnschr.*, May 13, 1890) affirms his earlier observations (1876–80) with the use of this drug. The article is decidedly polemical, and handles rather severely those who have criticised this treatment or the results claimed for it. Leblond and Baudier, of the Hôpital Saint Lazie of Paris, are quoted as strong supporters of this treatment, having used it with good success for the past eight years. They recommend the penciling of the affected parts with a solution:

R Resorcin 3.0
Glycerini 30.0

each hour during the day and as often as once in two hours in the night time. The sick-room should contain a Lister's spray apparatus, constantly pulverizing a solution of:

R Resorcin 50.0
Aq. destil. 1000.0

Leblond and Baudier find that glycerine is an excellent adjuvant, as it absorbs the water from the parts, lessens the swelling and decreases the size of the mucous glands of the part. When the membrane affects the nose, the injection of a 1 per cent. solution, or penciling with a 5 per cent. solution, is useful.

Andeer closes his article with the advice that in cases where topical applications cannot be made, as when the trachea is involved, the injections be made directly through the crico-thyroid membrane, preferably by *à jet reflex*. Nasal diphtheria should be treated by the use of soluble bougies containing resorcin, or solutions of the same drug injected, or saturating tampons.

SOLUTION OF SODIUM CHLORIDE IN ABDOMINAL SURGERY.—M. FRITSCH (*Semaine Médical*, June 18, 1890) claims that the danger in the use of ordinary antiseptics may be avoided by employing a 6 per cent. solution of common salt, with which the abdomen is freely douched. The fluid should be carefully prepared, thoroughly

sterilized, and used at a temperature of 38°C . The author says that the pains are lessened, shock decreased, and recovery hastened by this method.

LOCAL INFECTION WITH TUBERCLE BACILLUS.—DR. GUTZMANN (*Aerztlichen Praktiker—St. Petersburger Med. Wchnschr.*) describes an instance of local infection occurring to himself. In February he made a post mortem examination of a body dead of miliary tuberculosis, and, in removing the lungs, in some way injured the root of the finger nail. After the dissection he felt a pricking sensation in the tip of the finger, but could find no wound. This disappeared and nothing was noticed in the finger until the 20th of March, when it began to pain him, but nothing was thought of this until it began to be more severe, when a careful examination of the finger was made and a small abscess found at the root of the nail. This was opened and a little pus evacuated, which was spread out on a cover-glass and colored after Ehrlich's method. Upon examination three tubercle bacilli were found. The wound was thoroughly scratched out and disinfected. Lymph adenitis did not show itself, nor has there been any rise in temperature.

HÆMOPTYSIS A SYMPTOM OF INTERSTITIAL NEPHRITIS.—DR. DUCLOS (*Rev. gén. de Clin. et de Therap.*) says that hæmoptysis in adults, without cardio-pulmonary lesion, is an early symptom of interstitial nephritis. These patients are frequently affected with rheumatism, eczema, asthenia, and later they present signs of arterial sclerosis. Two interesting cases are described in which the sclerosis was at first confined to the vessels of the lung, where the condition gave rise to hæmoptysis. Later the process extended to the kidney, with an ultimately fatal result.

HYDRASTININ IN METRORRHAGIA.—E. FALK (*Arch. für Gynäkologie*, Bd. 37, Heft. 2) finds that hydrastinin which is an oxydation product of hydrastin, having the formula $\text{C}_{11}\text{H}_{11}\text{NO}$, is of greater use in the treatment of hæmorrhage than either hydrastin or the fluid extract of hydrastis canadensis. He claims that the drug produces strong and lasting contraction of the arterioles without affecting unpleasantly the heart or spinal cord. He gives an account of 28 cases treated in Landau's clinic which show that the drug is of great use in hæmorrhages, due to congestive conditions in the pelvic organs (congestive dysmenorrhœa, hyperplastic endometritis). In fibroids it lessens the quantity of blood, but in cases of metritis, and the severer neuroses its action is uncertain. From experiments upon animals he comes to the conclusion: that owing to the contraction of the small arteries especially the abdominal, the uterus is emptied of blood and

congestions of the genital organs are lessened. Immediate stoppage of the flow in metrorrhagia is not to be looked for, but good results may be obtained by using it a few days before menstruation is expected.

EXALGIN.—PROF. S. RABOW (*Therap. Monatsschfte*, May, 1890,) gives a critical résumé of recent communications regarding exalgine. This substance related as it is to antifebrine has the power of controlling pain in a remarkable manner; by many writers it is regarded as equal to morphine, but without the unpleasant consequences of the latter. The dose is from two to seven grains, it may be given in solution, with dilute alcohol, or mixed with water—in cold water it is but sparingly soluble. Excellent results have been obtained in the treatment of facial neuralgia, lightning pains of tabes, and in migraine. None of the unpleasant symptoms noted in the use of antifebrine has been observed with this drug. When given in from ten to fifteen grain doses it may cause vertigo, but cyanosis has never been noticed. Rabow warns against the too prolonged use of the drug, as like all the aniline derivatives, it lowers the vitality of the red blood corpuscles.

FARADIC ELECTRICITY IN CATARRHAL ICTERUS.—KRAUS (*Arch. f. Kinderheilkde.*) reports seventeen cases of catarrhal icterus cured by five or six applications of faradic electricity. One electrode is placed at the border of the liver in the neighborhood of the gall-bladder and the other in the same horizontal plane to the right of the vertebræ. The application produces contraction of the abdominal muscles, and it is also supposed to increase peristalsis in the gall-bladder which empties the organ and lessens its size.

PUERPERAL INFECTION.—ALFRED HEGAR (*v. Volkmann's Samml. Klin. Vortr.*, 1889), has added to the literature an interesting statistical study of the results of confinements in Baden for a number of years. A table is given showing the total number of labors, number of deaths within the first twenty-one days, proportion of deaths caused by puerperal fever, and other percentages. From this rich material, over 50,000 labors annually, he comes to the conclusion that the number of deaths in the first twenty-one days after labor has remained about the same for the past forty years.

Hegar rejects the theory of auto-infection, and refers every case to some external source, from this he argues that all manipulations of the genital tract are dangerous and may prove a source of infection.

He finds that the number of deaths during confinement since 1883 is greatly decreased in those under the care of physicians, so that there must

be an absolute increase in the mortality of those cases cared for by midwives. This increase he refers to the practice of injecting a 3 per cent solution of carbolic acid into the vagina, before labor. This practice recommended to midwives in the last few years he regards as most pernicious, as it not only directly carries the infectious material into the genital tract but encourages a meddling interference.

ELECTRO-THERAPEUTICS IN ATROPHY OF THE OPTIC NERVE.—M. WEISS (*Centralbl. f. Therap.*) claims to have secured excellent results in the treatment of this intractable affection with the use of the constant galvanic current. He employs a specially constructed electrode composed of a number of fine nickel or brass wires, covered with modelling clay; by this means evenness of application to the entire surface of the closed lids is obtained. Currents of 2 milliamperes are used, passing to an ordinary electrode placed at the nape of the neck. The writer claims that currents of this strength may be used for fifteen to thirty minutes without causing dizziness or distress. The length of the applications is especially insisted upon, and they should be repeated daily. The efficacy of this treatment is attested by the description of an interesting case of optic atrophy in tabes successfully treated by this method.

TREATMENT OF GOITRE.—MOSETIG-MOORHOF (*Wiener Med. Presse*, 1890), recommends the parenchymatous injection of iodoform in all soft goitres (*Struma follicularis mollis*). This variety of struma has been treated in this way, by the author, for ten years, and he has yet to see any unpleasant results. The injections are made under the strictest antiseptic precautions. Fifteen minims to 1 drachm of the following solution is used:

R. Iodoform.	3j.
Æther.	3v.
Olive oil.	3j.

The solution should be freshly prepared, transparent and of a light yellow color. From five to ten injections are usually needed, depending somewhat on the size of the struma. The injections should not be made oftener than once in from three to eight days. The reaction is usually very slight, and absorption continues some time after the last injection.

NUMBER OF BLOOD CORPUSCLES IN HEALTH.—W. REMECKE, of the Bacteriological Institute in Halle (*Fortsch. d. Med.*, vii, 1889) has recently conducted a series of observations upon his own blood. The examinations were made thrice daily, for twelve days. A marked variation was found in the number of white corpuscles at different periods of the day, though the average remained about the same. The result of the total of the seventy-two observations gave an average

of 1 white corpuscle to 720 red, though variations as great as 1 to 500, or 1 to 1,000, may be normal and often occur in healthy individuals.

FURUNCLES IN DIABETES INSIPIDUS.—J. LOWINSKY (*Centralblatt für Klin. Med.*) describes an interesting case of polyuria during the course of which multiple furuncles broke out on loins, back and thigh. The urine amounted to 7,000 cc. daily as an average of seven observations, with a specific gravity of 1004. The question of the relation of the skin symptoms to the polyuria is entered into at some length, and a brief review of the literature is given. The author concludes that there is a causal connection between diabetes insipidus and trophic changes in the skin.

BACTERIOLOGICAL STUDIES.—E. METSCHNIKOFF has recently been making some additional studies upon the anthrax bacillus (*2e Mémoire Annales de l'institut Pasteur, Centralbl. für Physiol.*). One of his conclusions is that the leucocytes of the blood are capable of destroying the living bacteria, and not as claimed by some, only the dead ones. This he claims to have experimentally demonstrated by the following method: Doves were inoculated with anthrax, and from the inoculated point some of the exudate containing leucocytes was obtained and mixed with bouillon, this substance destroys the leucocyte, but allows the bacillus to grow and multiply, as was directly observed under the microscope. That the bacillus still retained its virulence was proven by the fact that when three (?) leucocytes containing bacilli were removed on a fine pointed glass rod and placed in a drop of bouillon upon the stage of a microscope, the resulting culture proved deadly to animals.

The bearing of these observations upon the general doctrine of phagocytosis, is apparent.

ARISTOL IN THE TREATMENT OF OZÆNA.—DR. LOWENSTEIN (*Internationale Klin. Rundschau*) warmly recommends this drug in the treatment of severe forms of rhinitis. He describes four cases in which fetor was a prominent symptom, that were cured in a few days. The remedy was used in the form of a powder by insufflation, first removing all inspissated secretion, and then blowing the powder evenly over the clean mucous membrane.

IODINE IN THE TREATMENT OF RETINAL DETACHMENTS.—In the Berlin Medical Society, on May 7th, SCHOEHLER made a further report on the use of intra-ocular injections of iodine in the treatment of retinal detachment. A total of twenty-eight cases had been so treated, and details were given as to the five successful and the remaining more or less successful cases—three of the latter being really nearly complete successes. A number of the cases had been desperate, and

hardly suitable, from their long duration, the presence of cataract, etc. Serious hæmorrhage ruined the result in three eyes; minor extravasations lessened it in two cases; and in five a brilliant success proved but transient. Based upon a series of studies upon animals, and already attended with some success, the method seems worthy of fuller study, especially by laboratory experiments; and while an expectant treatment by rest, etc., should always be tried first, there is great likelihood that the method can be used in otherwise hopeless cases with moderate safety and considerable hope of cure.—*Medical News.*

TREATMENT OF PHTHISIS BY INHALATION OF BALSAM OF PERU.—DR. SZOENER (*Pester Med.-Chir. Presse; Internat. Klin. Rundschau*) describes the results in treating sixteen cases of phthisis by inhalations of balsam of Peru after the method of Landerer and Opitz. The results were excellent in these cases, some of which were quite far advanced. One patient suffering from diabetes was seemingly cured, at least sugar disappeared from the urine and the quantity of urine fell to normal, while another case of locomotor ataxia was greatly benefited.

KOLA-NUT FOR SEA-SICKNESS.—DR. C. W. HAMILTON, of the British Navy, writes to the *British Medical Journal* of May 10, 1890, that he has found the seed of the kola (*Sterculia acuminata*) a most successful remedy in sea-sickness. From $\frac{1}{2}$ to 1 drachm of the seed was slowly chewed, and in about half an hour the distressing symptoms of the malady gradually disappeared. The writer had never found any drug to act as well as this, and believes that further trials will prove it to be an effectual remedy for sea-sickness.—*Medical Record.*

CULTIVATION OF SARCINA FOUND IN URINE.—HARTGE (*St. Petersburger Med. Wochenschr.*) details the efforts made to cultivate the sarcina, obtained from urine. All the commoner methods were employed and none of them succeeded, as it was impossible to obtain the sarcina, free from rapidly developing bacilli, that would destroy the culture medium. At last he obtained rapidly growing cultures, upon agar-agar, containing $\frac{1}{2}$ per cent. of neutral urine. In this medium the sarcina would develop rapidly even when surrounded by colonies of other forms. From plate cultures he was able to inoculate urine, and solutions of sugar, so obtaining pure fluid cultures.

He briefly discusses the difference between lung and stomach sarcina, and those found in the urine. The former are easily cultivated at ordinary temperatures, while the latter require a temperature of that of the body. The former grow readily on decaying media, while the latter is easily destroyed, or at least will not grow in the presence of the commoner forms of decomposition.

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THE SOCIAL STATUS OF MEDICAL MEN.

In some communities, the honor in which the medical man of the place is held by all still persists as a remnant of the age that is past. This anomaly may be observed elsewhere as a result of the social precedence which the antecedents of the incumbent carry. Many, though not all medical men, are active in every good work in the community in which they live. They are leaders in literary and educational, as well as in political and benevolent undertakings, and the influence which they exert in these directions is accredited to the profession to which they belong. The fact that they are looked to as teachers of science in its broadest sense, and as examples of culture, leads them to depart from the too narrow limits of medical reading, for excursions into literature, philosophy and science. These examples of the cultured physician are most often, if not most typically, observed in the country. The exigencies of general practice, far from specialists, encourages a study of, and practice in, the whole field of our science and art.

In the city, strange as it may seem, there is a strong tendency among medical men to become dwarfed in their general culture by an excessive devotion either to an inexhaustible practice, or to the study of a limited field. Association of place calls forth no interest in local affairs. The development of the man and the scholar is neglected for the development of the doctor or the specialist. Thought, reading, conversation and dreams alike are confined to the tread-mill of daily occupation. Therefore, with

few notable exceptions, our profession in the cities is unknown in the social world. Unfortunately many medical men are influenced by financial considerations to parade in those artificial and secret organizations which are ordinarily known as benevolent societies. These offer the same possibilities of a rapid acquaintance that the small community affords.

As long as the standards of this commercial age prevail, success will be measured by the financial rewards which it secures; and science, and medicine, as the noblest and most benevolent of the applied sciences, will be poor in honor and profit. The inventor of a labor-saving device has a property in his invention, and a prospective, adequate reward; but our civilization has not yet begun to appreciate the value of life and health. What reward, for example, awaits the physician or scientist who shall restrict the ravages of disease? Every student of mycological pathology believes that preventive inoculation will be successfully practiced against all those diseases in which one attack renders the individual immune to subsequent invasion. Why are there not as many attempts to institute such protective methods as there are to contrive labor-saving machines, or to produce literary works? There is no lack of opportunity, but there is no hope of reward. Let us suppose that a young physician to-morrow brings out a method of inoculation against scarlet fever which will relegate that mournful disease to the seclusion small-pox has sought; what, in the estimation of the most sanguine, might he reasonably expect? What does history teach? There is certainly no provision for financial reward similar to the reward which would follow the invention of a more destructive weapon of warfare. Nor could honor or social distinction be expected. The optimist would hardly promise him anything but calumny, abuse and insinuations of chicanery or delusion while he lived, and a systematic defamation of his memory when he was dead and buried.¹

Although the scientific position of medicine is impregnable, and its lack of honor and social position is due almost entirely to its inadequate rewards, the conditions which prevail in the commercial and manufacturing pursuits are not so flattering that they tempt the adoption of so-call-

¹"History and Pathology of Vaccination," Edgar M. Crook shank, Philadelphia: 1889. 2 vols., 8vo, pp. xii and 466 and 610.

ed business principles and methods.* Indeed the social and economic discussions of the day point to the probability that business has advanced as far as possible in the direction which it is pursuing, and that relief is to be expected in the abandonment of unproductive competition and commercial warfare; in fact, in a return to the principles which prevail in medicine to-day.

The restitution of its estate and of its social position to scientific medicine will be secured by a systematic effort to instruct the people, and especially the youth, in the principles of true science and the position which medicine occupies as the most practical of the applied sciences; by offering the least resistance to those false sciences, which are parading as cure-alls, confident that their true anatomy will soon be discovered under their disguises; by coöperating more and more closely with one another and with those in pursuit of the allied sciences; and by devoting a larger portion of our time and energy to the common good.

FILARIA SANGUINIS HOMINIS AT CHARLESTON.

DR. DE SAUSSURE, of Charleston, S. C., contributes to the *Medical News* the result of his study of twenty-two cases of filaria sanguinis hominis, occurring in that city 1886. Efforts had been made prior to 1886 to discover the filaria in certain cases of chyluria, suspected to be due to the parasite, but without success. DR. JOHN GUITÉRAS obtained the first ocular proof in a mulatto woman, aged about forty years, who was chyluric. Of the 22 cases, 16 were married and parents; in over half of these, filaria were searched for among their children, husbands, wives, also among the friends and bedfellows of the unmarried; yet in only one instance was there found a second case in the same household. The white persons were seven in number, males five, females two; colored, nine males, six females. Three whites were socially "in high life," all the others, black and white, belonged to the lower and middle classes. The drinking water is mainly from the pump and artesian well, and exceptionally from the cistern; for a short period just after rain-storms, the poor may use the barrel-water for a time, but this is soon exhausted, and the people go back to the pump and well.

The artesian water is from wells sunk 1,800 feet deep and over, but before it is ready for service is stored in an open reservoir; like the barrel-water it contains many specimens of microscopic animal life.

The diagnosis of the disease can alone be made with the microscope. Chyluria, chylocele, lymph-legs and glandular enlargements were frequently found without the filaria being detected. Again, filaria are found without the usual lymphatic disturbances. Again, chyluria was intermittent in every case. An abundance of filaria was not an essential index to the intensity of the chyluria.

Learning from a veterinarian of his city that filaria were frequent among the dogs of Charleston, Dr. Saussure made some observations on that animal, going to show that the embryo filaria in man and dog are very similar, if not identical. This difference occurred, however, the parasite of the dog can be detected at any time of the day or night; in man it was never found—with two exceptions—in the day. The fleas of filari-ous dogs were studied for some time with negative results, but finally two filaria were found in the body of a flea taken from a diseased dog. If this observation shall be confirmed it will throw considerable light on the question of the convection of the disease. DR. BANCROFT, who was the first to identify the filaria hominis in Australia, in 1876, and to point out its embryonic development in the mosquito, has advanced the opinion that all filaria, whose embryos circulate in the blood, require in order to their dispersion among other animals, the intervention of some blood-sucking animal, such as the mosquito, flea, louse or sand-fly, all of which should be studied in the localities favored by the filaria. Dr. Bancroft believes that one of the ways by which the parasite has proved injurious has been by invading the heart and there causing thrombosis; it may also be the cause of embolism.

THE NEW HYPNOTIC, SOMNAL.

The ideal hypnotic has not yet been discovered. Chloral hydrate is a great favorite, especially among our asylum superintendents, but it has its manifest drawbacks in private practice. Chloralurethan and chloralamide are competitors for therapeutical favor, along with somnal, all of them depending largely on chloral for their efficiency. This suggests that we may before long get some

* "Doctors' Inventions," editorial, *The Times and Register*, May 31, 1890.

composition on that base of chloral which will be more prompt and manageable than any we now have. Sulphonal has lost some of its hold by reason of its irregularity, by putting the patient to sleep twelve hours or more after the time when the somnolence was sought, or prolonging it beyond the point desired; its potency in a certain range of cases should not be denied, but taken as a whole the drug has been a disappointment to many. The latest hypnotic, somnal, to receive attention, is preferred by DR. KNY, the eminent specialist of Strasburg, chiefly on the ground that it has very little influence over the heart's action. The short time, a half-hour or less in many cases, wherein sleep is induced makes somnal much preferable to sulphonal, which seldom acts under one or two hours, or it may begin to act when the practitioner is about to administer a second dose. The inventor of somnal, HERR RADLAUER, of Berlin, has been able to prove that it is a distinct chemical compound, having the formula $C_7H_{11}Cl_4O_2N$. It is obtained from chloral, alcohol and urethan, and comes as a clear fluid. It differs from chloral-urethan in that it contains two atoms more of carbon and four atoms of hydrogen. Radlauer advises that the initial dose shall be 2 grams, or $\frac{1}{2}$ drachm, mixed either with syrup of raspberry or juice of licorice. The somnolence lasts seven, eight and even as long as ten hours. Doses of twice the size above mentioned have been given by PROF. LANGENBUCH, of the Lazarus Hospital at Berlin, without noticing any toxic effects, while the hypnotic result in many cases has been excellent. The quality of sleep is said not to be profound, so that the surroundings should be made as little disturbing as possible.

PROTECTIVE INOCULATION.

One of the strongest arguments against the efficacy of the preventive inoculation of rabies, has been that an attack of the disease did not confer immunity or prevent the subsequent occurrence of the disorder. PASTEUR seems to have demonstrated that a certain immunity may be obtained in dogs, but after a time they again become liable to rabic infection. The general principle of protective inoculation has been strengthened by the recent observations of A. DE PAOLIS (*Riforma Medica*, No. 200), who has found that in repeated

inoculations of rabbits with erysipelas cocci, they rapidly lose their susceptibility to the disease, until finally no reaction is obtained. He has further found that the cocci themselves soon lose their virulence when successively cultivated upon gelatine or in bouillon. These cultivated forms may be introduced into the abdominal cavity without causing any symptoms of erysipelas, or indeed, any disturbance of the general health of the animal. What is of more importance is that rabbits inoculated with this "minimized" virus are not susceptible to the most active cultures of the erysipelas cocci.

The value of observations of this kind cannot be overestimated; not only from their scientific interest but from their possible practical importance. We hope soon to chronicle the confirmation of these experiments, and to see their extension to other infectious diseases.

EDITORIAL NOTES.

PROTECTION OF THE INSANE AGAINST FIRE. The *Medical News* says that in view of the frightful loss of life from the burning of asylums at Montreal, Canada, and Utica, N.Y., the Committee of Charities of the Massachusetts Assembly have framed a bill requiring iron fire-escapes to be constructed on the outside of all asylums for the insane throughout the State. Suitable apparatus for the distribution of water hose within the buildings will be required, and the trustees are directed to cause a regular monthly inspection to be made of these life-saving appliances.

SIXTY YEARS A PHYSICIAN.—The Chicago Medical Society at a meeting held at the Grand Pacific on the 7th inst., celebrated the sixtieth anniversary of the entrance into the medical profession of Dr. William G. Dyas, who was born in Dublin in 1807, and after passing twenty-nine years of professional life in Ireland, came to America thirty-one years ago. Appropriate resolutions on the event were read by Dr. Rachel Hickey and presented to Dr. Dyas as a memorial. The presentation speech was made by Dr. Hoag, and was received on behalf of the doctor by Dr. G. C. Paoli. Speeches were also made by Drs. William E. Clarke, C. W. Earle, E. Ingals, C. D. Wescott, and L. H. Montgomery. The Committee on Necrology paid tributes of respect to, and read sketches of the lives of recently de-

ceased members, among whom were Drs. W. H. Byford, Samuel Shaefer, T. R. Gaudy, and J. P. Ross. The meeting closed by the exhibition by Dr. C. A. Earle, of Seibert's Sterilizing Milk Apparatus, and a paper by Dr. T. Melville Hardie.

FRENCH PHYSICIANS AND THE BERLIN CONGRESS.—So far from boycotting the Berlin Medical Congress, France seems anxious to be officially represented thereat to the fullest possible extent. In addition to the nine army surgeons who will represent the Minister of War, and the three professors who are to represent the Minister of Public Instruction, it is now announced that Professor Proust, Dr. Netter, and Dr. Valude will be sent as delegates by the Minister of the Interior, in his capacity as head of the sanitary service. Drs. Brassac and Hyades will represent the Minister of Marine.

CHOLERA has again broken out in the city of Mossul, on the Tigris. The Russian government has sent Dr. Jélissejew to learn the extent and progress of cholera in Persia. It is stated to be on the increase in and about Valencia, and to have broken out in Portugal. Some alarm is felt in London and Paris. In the latter city the government has put to work some 22,000 men at filtering the water supply.

OSCAR LIEBRICH in April celebrated the 25th anniversary of his admission to the practice of medicine. He was at first a chemist, and later studied medicine at Föbingen and Berlin, where in 1865 he was made Doctor of Medicine.

ANTIPYRIN.—The extent to which antipyrin has been used may be inferred from the fact that the chemical factory in Höchst on the Main, which has a monopoly of the manufacture, reports a profit of over 5,000,000 marks.

THE NEW COMMITTEE OF PHARMACOPŒIA, REVISION.—The newly constituted Committee of Revision and Publication of the United States Pharmacopœia has twenty-five members, thirteen of whom bear the title M.D., and twelve that of Ph.D. or its equivalent. Dr. H. C. Wood, the President of the Convention, was by special vote added to the Committee, making the number of physicians fourteen. Of the thirteen, three have served formerly, Drs. T. F. Wood, F. A. Castle, and Otto A. Wall. The newly appointed physicians are Drs. Roberts Bartholow, N. S. Davis,

Jr., R. T. Edes, J. M. Flint, C. O. Courtman, R. G. Eccles, W. G. Gregory, J. Godfrey, W. M. Mew, and H. H. Rusby. Of these the Army, Navy and Marine-Hospital Service have each one representative. Eleven members, in all, of the last Committee of Revision have been retained in the present one. The Chairman of the old Committee, Mr. Charles Rice, was voted the sum of \$1,000 as a personal testimonial in recognition of his immense labors during the last decennium; this gift he retained long enough to express his grateful sentiments, and then passed it over to the Treasurer of the new Committee. Mr. Rice was re-elected to the chairmanship of the Committee.

DR. SCHWENINGER'S INTRODUCTION TO BISMARCK.—A German journal not long since recited the following as a truthful account of what transpired between Prince Bismarck and his favorite physician, about the time of their first meeting. It was at Carlsbad. He was feeling very unwell and sent for Dr. Schweningen, who began to put all sorts of inquiries to him, some of which did not suit him. At last the Prince lost his temper, exclaiming, "What are you driving at, doctor?" Nothing disconcerted the doctor replied, "I am at your orders, Prince; but if you wish to be treated without being questioned you had better send for the veterinary, he is accustomed to practice medicine that way." The Prince saw the point and gruffly said, "Hold on, I guess you are the man I want," and became the model patient from that day forward.

REMOVAL OF A LOWER LID FOR CARCINOMA.—Prof. Eversbush (*Munch. Med. Woch.*), reports the removal of a lower lid for Carcinoma, the defect in the skin being supplied by a flap from the forehead, the mucous membranes of the œsophagus of a rabbit furnishing the conjunctiva for the new lid.

DR. F. H. BROWN, of Boston, has invented an apparatus to enable deaf persons to hear public speakers.

On June 20th the foundation stone of the main buildings of the Emperor and Empress Frederick Children's Hospital, at Berlin was laid in the presence of the Empress Frederick. Professor Virchow, in the name of the Committee, thanked that exalted lady for her unremitting labors on behalf of the new institution, towards the cost of which she had collected \$125,000.

TOPICS OF THE WEEK.

THE RACES OF CENTRAL AFRICA.

The Masai tribes who inhabit the rich volcanic country east of the Victoria Nyanza are among the most interesting people in Central Africa. They are not negroes: they have good cranial development, straight, well-shaped noses, eyes with a slight Mongolian slant upwards, prominent cheek bones, jaws rarely prognathous, chocolate-colored skins, and extremely well-proportioned limbs. Both men and women elongate the lobes of the ear by ear-stretchers, till they nearly reach to the shoulders, and their fists can be put through the orifice in the distended part. The chief achievements of the young Masai men or warriors seem to be to make eloquent speeches and to commit murder. Internecine wars have depopulated their country, and their ferocious attacks on caravans have made Masai land both the terror and the *terra incognita* of travellers. Till they marry the young men feed on milk and flesh food, and smoking and chewing tobacco and drinking fermented liquors are strictly forbidden. Before setting out on a fighting excursion the warriors retire to the mountains and gorge themselves with beef with the idea that they thereby store up strength. After marriage they add vegetables to their food, and they then chew tobacco and indulge in an occasional carouse. The married men and women live in kraals apart, and the unmarried girls and warriors live together in other villages by themselves, in a state of promiscuous free love. The women are completely clothed in dressed hides, and are as immoral as the men are arrogant and ferocious. The Masai will not allow burial of a corpse, as they think it will poison the soil, and it is therefore cast to the wild beasts without ceremony.

They have no religion and no belief in a future, but are extremely suspicious, and have complete belief in witchcraft. Thompson, the traveller, was the first European to traverse the country of this terrible Masai, did so by posing as a great white wizard by the aid of an electrical machine, an artificial set of teeth removed at will, and Eno's fruit salt, which, on being made to fizz at the firing of a gun, would, it was alleged, work wonders ten days after he had left. To spit on a person is to confer the greatest mark of respect. Where the Masai have, as the result of warfare, been obliged to settle and mix with other tribes, and have been cut off from the evil traditions of their race, their superior mental development has resulted in producing hybrid tribes distinguished for their energy in trade and their good government. This experience is encouraging at the present moment when we are making arrangements to take these wild tribes under our protection.

The Wa-Karirondo, who live north of the savage Masai, are cultivators of the soil and a vegetarian people. They have a less fine physique and less ferocity of disposition than the Masai. The men go absolutely nude; the women "wear necklace and a smile," and sometimes a cotton tail; but though unclothed they are as distinguished for their modesty and virtue as the

draped Masai women are for their audacity and vice. They are fond of dancing, in which violent muscular movements of the arms and shoulders play the principal part.

The Waganda may be said to be the French of Central Africa. They are people with ideas, and they lead the fashions. A race which prides itself on descent from remote white progenitors, the Waganda stand out, by reason of their elaborate system of autocratic government, their laws and customs which control all the affairs of life, even the amount of bare leg permissible at court; their higher civilization, which is shown in their dress, houses and sanitary arrangements—as distinct and separate from the naked savages which surround Uganda, "the Pearl of Central Africa." The Emperor Mtesa, with his barbaric court on the shores of the Victoria Nyanza, his arrogance and cruelty, his intelligence and eager desire to learn, his vast armies and his huge harem, has been described by Speke and Stanley with such minuteness and brilliancy that his name and character will never be forgotten. The Waganda are extremely intelligent, and the missionaries who followed in Stanley's steps and established a station at Uganda tell wonderful stories of individual converts who quickly learnt to read the Bible in their native tongue, and to write capital letters, and who even suffered cruel martyrdoms for their faith; but all who have had anything to do with these people agree that, as a whole, they are crafty, lying, murderous thieves. Both men and women are draped in bark-cloth, and immodesty is a crime; the dwellings are clean, and each householder is obliged to construct a privy away from the house; the banana and plantains are the staple articles of food, the savory cooking of which is practiced. The Waganda are very skillful with their fingers, and in the making of shields, spears, and canoes they excel all other African tribes; they are extremely fond of music, and have a number of musical instruments; indeed, so fond are all the African races of music, that, in Sir Samuel Baker's opinion, a man who plays the cornet, or an organ grinder, could pass unharmed from one end of Africa to the other; and that a missionary to be successful ought to be able to dance a jig and play the bagpipes. Women in Uganda are mere baggage and all wives have their price.

The Wanyamwezi, who have become the trusted porters or *pagazis* of all exploring parties or trade caravans into the interior, are a people of great endurance and physical strength, and are docile, courageous, and obedient if well led. A curious custom prevails among the Wateita of coating the body with lampblack and castor oil, which acts as a protection against excessive heats by day and chills at night.

The cannibals of the Congo, whom Stanley was the first to discover and visit, and who pursued him and his followers all down the great river with yells and cries of: "Meat! Meat! Ah, we shall have meat to-day!" show, in spite of their horrible tastes, a somewhat high standard of achievement in the building of their houses and canoes, the smelting of metals, and ornamenting of weapons, etc.

The Pigmies of the forests of Central Africa are men-

tioned by Herodotus, and have been spoken of, mostly by hearsay, by nearly all African travellers; but Du Chaillu was the first to give an account of them and their settlements and to obtain measurements of their bodies and heads. Those described by him were the Obongos, of Ashanpo-land. They are of extremely low type, with exceedingly low and narrow foreheads, in height about four feet six inches, and with the body covered with tufts of hair.

In some parts of the great central forest the dwarfs seem to be hunted and eaten by the more powerful tribes, and Stanley describes how the villages of the Congo are ornamented with the skulls of what the natives called "Sokos," who, they said, were hairy dwarfs who lived in the forest, and whom they hunted, killed, and ate, because they stole their bananas. Stanley obtained two Soko skulls, and brought them home and submitted them to Professor Huxley, who declared that they were human skulls, with all the characteristic peculiarities of the negro type, including a well-marked, but not unusual, degree of prognathism. The cephalic index was 75.

In Western Equatorial Africa the tribes are not cannibal south of the equator. The tribes are split into clans, each clan being presided over by a chief or father under whose protection they live. The powerful king and the despotic form of government of Eastern Africa are unknown. The law of the strongest does not prevail, and they do not raid for plunder. Polygamy and slavery prevail here as elsewhere in Africa. They understand the arts of weaving and smelting metals, but how they learnt them they could give no account. As these races have not been subject to European or Arab influence, it is probable that the people, as well as their primitive arts are of great antiquity. Du Chaillu holds that "of all the uncivilized races of men the negro has been found to be the most tractable and the most docile, and he possesses excellent qualities that compensate, in a great measure, for his bad ones. That he will disappear in time from the land he (Du Chaillu) has very little doubt; and that he will follow in the course of time the inferior races who preceded him."

That the population of Africa is decreasing all allow, and Du Chaillu mentions as the causes: "The slave trade, polygamy, the barrenness of the women, death among children, plague and witchcraft," and adds "the latter takes away more lives than any slave trade ever did." The system of night nurseries, described by Sir Samuel Baker, must also have great effect in keeping down the population. Into sheds, built without the means of ventilation, the babies are put at dusk, there they lie all night on the clay floor in a reeking atmosphere. They are fetched in the chilly morning by their mothers, when they try to warm their little naked bodies at the hut fire.

The ravages made by small-pox are terrible. The most repulsive form of the disease prevails, and unchecked by vaccination, it often sweep away whole villages and clans. Some writers speak of plague, and describe the bubos in the axilla, which recall the plague of the Middle Ages. Elephantiasis, leprosy, and dysentery prevail, and Europeans are almost invariably attacked

by malarial fevers, which yield, however, to quinine. Drunkenness is not, as is frequently stated, introduced by Europeans, but is one of the favorite vices of the primitive negro.—*British Medical Journal*.

SUMMER DRINKS IN INDIA.

The *Medical Record* of Calcutta contains some interesting remarks upon the beneficial effects to be derived from non-alcoholic drinks in the height of summer. After remarking that the very bane of European existence in India lies in the habits of eating and drinking, physiological arguments are adduced to show that highly carbonized materials are very deleterious in hot climates. The custom of the Moguls, who for luxury have had no equal in Indian history, is referred to as offering a fitting example. Their drinks consisted of milk, sweetened waters, or sherbets, prepared from subacid fruits, such as lemons, tamarinds, pomegranates, etc., flavored with rose or Keora essences, date juice, numerous vegetable tisanes, and some infusions of glutinous seeds flavored with sugar and essential oils. These were often cooled with ice collected in pits, where it was stored during the winter months. The Oriental races, it is asserted, suffer from few of the diseases which are common to the copious meat-eating, wine-drinking Europeans. For a hot day, a light vegetable diet is recommended, with a spare quantity of meat food and an abundance of cooling, non-alcoholic drinks. Ice is regarded as a necessity, and coffee, tea, and cocoa are to take the place of whisky-and-soda. The use of aerated waters prepared from pure and wholesome ingredients, and the admixture in them of the numerous fruit flavorings which abound in the tropics, are regarded with favor, as likely to offer a lucrative source of income to persons engaged in such trade, while also giving the European community a very acceptable form of summer drinks. This suggestion has already to a certain extent been put into practice both in this country and in America, but there is still some uneasiness as to possible evil consequences resulting from the consumption of large quantities of iced drinks when the atmospheric temperature is high. As regards light diet and extreme moderation in the use of alcohol, however, the recommendations are admirable, and might well be followed here.—*Lancet*.

PROPRIETARY MEDICAL PREPARATIONS.

At a recent meeting of the Society for the Study of Inebriety, the President, Dr. Norman Kerr, read an abstract of a report presented to the American Society on "Nostrums." A number of reputed "cures" for alcoholic and opiate inebriety had been analyzed. All were found to have alcohol present in substantial proportions. Dr. H. W. Williams, Mr. F. J. Gray, Mr. Jabez Hogg, Mr. Wm. Gourlay, Mr. L'Oste, and Dr. Paramore took part in the discussion, which resulted in the adoption of a resolution to the effect that, as much inebriety was caused by the use of alcohol and opium under the insidious form of patent medicines and so-called "cures," the meeting was of opinion that no proprietary medical preparation should be sold unless its exact composition were printed on the cover.—*British Medical Journal*.

PRACTICAL NOTES.

COSMETICS FOR THE PHYSICIAN.

The secrets of the toilet, the arts by which lovely woman hides incipient corrugations, effaces blemishes, and softens and beautifies her cutaneous apparatus and its appendages generally, are rarely investigated by the physician. He contents himself with removing some particularly obtrusive mark, pulling out superfluous hairs, or trying, with spirits and Spanish flies, to fasten in the too deciduous hair. Dr. H. Paschkis, of Vienna, however, has attempted to inaugurate a new era in this line, and has written a book, "Kosmetik für Aertze," which is intended to enable the physician to add to the æsthetic enjoyment, as well as physical welfare of humanity. Paschkis' book is said by a reviewer in the *Deutsche Medizinal Zeitung* to be a thoroughly scientific one. Its formulæ are based upon dermatological knowledge and pharmaceutical experience. As illustrations we are given four formulæ for that popular domestic article, "cold cream." One of them is as follows:

- R. Lanolin 10.0.
 Boracis 1.0.
 Aqua rosmarin 100.0.
 M. Sig. Lanolin-milk.

A formula for seborrhœa is the following:

- R. Kali carbonat. 10.0.
 Aqua destillat. 100.0.
 Olei æth. cinnamon. gtt. 2.0.
 Olei æth. rosmarin. gt. 1.0.
 ℞.

For warts our scientific book of beauty prescribes:

- R. Acid salicylicum 5.0.
 Collodii 20.0.
 ℞.

For sweating feet, 5 to 10 per cent. solutions of chromic acid are recommended.

For dandruff and baldness there are, of course, numerous prescriptions, but, we regret to say, no specific is announced. For a simple wash, as preventive of dandruff, we find:

- R. Kali carbonat. 2.0.
 Aquæ 100.0.

The formula for Hebra's dandruff water is also given, viz.:

- R. Spts. æther. 100.0.
 Tinct. benzoin 15.0.
 ℞.

Mouth-washes and tooth-powders are given, the author warning his readers especially against the use of salicylic acid for these purposes.

We have not space to describe the merits of Dr. Paschkis' work in further detail. But it is evident that, equipped therewith, the physician can enter on even terms the contest against the balms of Récamier, the secret washes of Lola Montez, and the roborant lotions of the Sutherland and other sisters.—*Med. Record.*

DIGITALIS WITH STROPHANTHUS IN CARDIAC DROPSY.

From the Paris letter of the *Medical Press and Circular*, May 7, we copy the following combination, which has been found "decidedly useful" in the treatment of dropsy of cardiac origin:

- Digitalis leaves 30 grs.
 Water 6 fld. ozs.
 Infuse and to it add:
 Citrate of caffein 30 grs.
 Tinct. strophanthus. 10 drops.
 Acetate potash 2 drachms.
 Syrup of orange 1 fl. oz.
 Mix. Dose, 1 tablespoonful during twenty-four hours.

PRESCRIPTION FOR CHAPPED HANDS.

The *Times and Register* offers the following as a combination that will be found serviceable in a large proportion of cases of chapped hands:

- Menthol 12 grams.
 Salol. 30 "
 Olive oil 30 minims.
 Lanolin. 1.5 oz.
 Mix. To be applied twice daily.

ATROPINE IN ENURESIS.

In the *Archives* Dr. W. Perry Watson strongly advocates the use of atropine in this condition, and gives short notes of thirty cases treated in this way with quite astonishing results. The formula employed was:

- R. Atropiæ sulph. gr. j.
 Aquæ destillatæ. 3j.
 ℞.

Of this mixture 1 drop was given for each year of the age of the child at 4 and 7 P.M. In some cases the dose was doubled, if the disease was not cured by the end of the second week. In one or two of these cases some physiological symptoms were produced.

DIURETIN, A NEW DIURETIC.

The diuretic action of caffeine being open to the objection that it may be accompanied by sleeplessness and restlessness, it has occurred to Dr. Gram, of Copenhagen, to employ a sodio-salicylic compound of theobromine, to which he has given the name of "diuretin." Notwithstanding the strong resemblances between theobromine and caffeine, diuretin is alleged to produce strong diuretic action without in any way affecting the central nervous system, and to give satisfactory diuresis in cases of renal and cardiac dropsy in which digitalis and strophanthus have been inoperative. It is described as occurring as a white powder, containing 50 per cent. of theobromine, which dissolves in less than half its weight of water with the aid of heat, and remains in solution after the liquid has cooled. Six grams have been given daily in drachm doses.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, October 16, 1889.

DR. CHARLES E. HAGNER, PRESIDENT, IN THE CHAIR.

DR. J. TABER JOHNSON presented the following cases with histories of the cases: 1. *Abscess of the Fallopian Tube.* 2. *Cysts of both Ovaries.*

DR. P. S. ROY read a paper on

HEART FAILURE.

There seems to have been an effort made in the last two years by medical writers to introduce the term "heart failure" in the medical nomenclature with the hope, I think, of supplanting the rather vague terms now in use—syncope and heart paralysis. Up to this time so far from removing any cloud they have rather added to the confusion, but I believe a step has been taken in the right direction. The term syncope goes far back in medical literature and I find in 1847 Marsh using "heart paralysis" in cases of sudden stoppage of heart force. Heart failure can have its origin in organic changes, particularly fibroid and fatty change in the muscles, but what is oftener the case, the heart is found without any structural changes and it is with these cases I propose to deal. Looking at these cases we find two causes: Poor nutrition both in quantity and quality, or direct inhibitory action of the vagus upon the heart ganglia. Through the vagus may come an inhibitory nerve impulse which, if sufficiently strong, may stop the heart in diastole, causing death; the intrinsic ganglia of the heart being for a time powerless to act. Nothing is more beautiful to the physiologist than a study of the heart. In the study of heart failure no one has done more than McWilliams, of Aberdeen. With great clearness McWilliams traces the relations between nerve impulse and the heart's action; he shows the beautiful relationship between the intrinsic and extrinsic heart nerves. But McWilliams, I think, has given the subject more attention from a physiological than clinical standpoint, for he thinks that in a large proportion if not all cases the result must be death. He tries to prove this by experiments on dogs. To the physician who wishes to save life, (for that is the practical side of every medical subject) those cases of heart failure coming from improper and poor blood supply, thus affecting the muscular and nerve forces, are for the most interesting, for we have means of treating them and I think in most cases successfully. Where shall we look for such cases? what are the symptoms? and what treatment is necessary are the questions presenting themselves. After severe acute disease or after chronic diseases that alter the blood, look for such cases. In pneumonitis enteritis, dysentery, typhoid fever

and rheumatic and gouty cases, death often comes from heart failure. The symptoms of heart failure are not always the same. Nor are they in any disease, but in most cases will be found pale or livid face, weak quick pulse, with hard respiration showing imperfect systolic action. To these symptoms may be added general nervousness. Yeo makes a most wise remark in his recent "Physiology," speaking of the special heart ganglia he says: "These nerve cells only require their nutrition kept up by a continued blood supply, in order to develop the energy necessary for their functions." The heart in heart failure, says McWilliams, has irregular or fibrillar systolic action, it has not the power to send the blood through the arteries. He also adds, one of the most common causes as improper blood supply and poor blood. Are not the conditions, therefore, plain, dilate the arteries thereby relieving the heart and giving its arterioles an increased amount of blood for its own nutrition. While these are the indications for urgent symptoms the blood must be looked to and its condition improved. Before giving several cases of my own I will mention two recorded by Bowie of Scotland. In his cases there was an acute congestion of the lungs, the patient had mitral disease but it had not gone far enough to produce any general symptoms. Bowie describes in his cases the symptoms I have given for heart failure. It was his treatment that was especially interesting to me; he says getting no result from digitalis he began the use of nux vomica, another excitor motor and used it in small doses rapidly repeated; in the course of a few hours his patients were much better and went on to recovery.

Now, it is my belief the good results gotten from the nux vomica were from the toxic and not the physiological effects. Nux vomica as a toxic agent acts as a motor depressant, thereby dilating the arterioles which met the indications. Motor stimulants are intended in an entirely different class of cases, we give digitalis and other motor stimulants, in heart dilation. They produce increased systolic power and prolong diastole, by this means the weak muscles are enabled to do more work just as one powerful blow of a sledge hammer carries a spike further than many weak blows of a child, though the same amount of energy may have been expended. In the class of heart failure due to inhibitory action of the vagus we find the heart stopping in diastole; here, just as in the other class of cases there is a want of blood, the indications are arterial dilation; for in this way the arterioles are dilated, which is a powerful stimulus to the ganglia, thus bringing on the needed systolic action. I have had in my practice in the last two months two cases of heart failure coming from improper blood supply both in quality and quantity. The first case was that

of a lady sixty years of age who was just commencing to convalesce from an attack of dysentery. In her case my attention was called to her general nervousness, and I gave her tinct. belladonna and bro. potassi to meet these symptoms. The next day I found my patient still nervous with livid face and weak pulse—indeed she was worse. I stopped the belladonna and bromide, and during the day gave her some whiskey. In the evening of the second day I was sent for to see my patient, I found her nearly unconscious and all the other symptoms I have mentioned increased, with these, the respiration had been hurried. I immediately ordered one of the most prompt motor depressants, nitroglycerine, and gave the one-fiftieth of a grain every hour. After the second dose my patient was much better and the nitroglycerine was given four times daily. At the time I gave the nitroglycerine I used a hot mustard foot bath. Nourishment was given often and in small quantities. This case has progressed to recovery. I believe digitalis would have injured my patient. My second case was a patient with typhoid fever, male about 40 years of age. The treatment was the same as in the first case, the patient got well. I have had other cases and to my sorrow some have died in spite of all treatment. This is but the outline of a class of cases that come in every man's practice requiring prompt treatment or death will result. I am convinced the term heart failure should be used in medical literature, and the time is not far distant when it will be as definite a term in medical nomenclature as typhoid fever. I have avoided making any mention of organic heart trouble, of course they may complicate any case to some extent, but in all cases the indication is more blood to the heart. I will now make my definition of heart failure, and its correctness will depend upon the correctness of what I have stated in this article. Heart failure is a more or less sudden loss of heart force due to either improper blood supply in quantity and quality or direct inhibitory nerve action upon the cardiac ganglia. Either class of cases can exist without organic changes in the muscles of the heart.

DR. HOEHLING gave the details of a case of carbolic acid poisoning from rectal enemata of carbolized water. The patient came near dying from heart failure but was stimulated by hypodermatic injections of sulphuric ether.

DR. D. O. LEACH gave the history of a child two and a half years old that came near dying from heart failure. He found it in collapse and administered whiskey freely. He met Dr. Roy the following day and told him of his case and he suggested nitroglycerine. The child had been taking the $\frac{1}{100}$ of a grain doses for a week and was getting well. Dr. Leach believed the recovery was due to the nitroglycerine.

DR. BUSBY: The subject of heart failure is

very interesting and very comprehensive and should not be passed over lightly. We should define heart failure as it is consecutive to many conditions. It should be distinguished from shock, and should not be confounded with excessive inhibition. He doubted the diagnosis in Dr. Hoebling's case as the carbolic acid poisoned the center thereby impairing the heart's action. We might as well say that opium poisoning caused heart failure. Heart failure is due either to changes in the heart muscle or to defective and deficient blood-supply. It may, however, occur in a well heart from some exhausting disease, as cholera morbus or cholera infantum. Excessive loss of blood may also cause it. Heart failure may occur in a well heart as a consecutive phenomenon. It is apt to occur in pneumonia, typhoid fever, diphtheria and other long-continued exhausting diseases. In such cases it is the effect of the fever, toxic influence, fever or overwork. In continued high fevers structural changes occur in the heart muscle as shown by the necroscopy. In diphtheria it is not so much the result of the high fever as of the change in the heart caused by myocarditis, softening and granulo fatty degeneration. In typhoid fever it is the result of changes in the heart structure. It is the ordinary result of structural disease of the heart. When compensation ceases the heart gradually loses its power. In the study of this subject we should study the relation of heart failure to disease as in diphtheria, typhoid fever and pneumonia. It is not necessarily due to structural change in the heart as it may be caused by overwork as in pneumonia. In paralysis following diphtheria the heart muscle may be invaded. While heart failure is the proper term in many cases it is not always used intelligently. The pathological condition should always be considered. We should draw a distinction between heart failure, paralysis and shock. Heart failure means serious structural changes in the heart's muscle or qualitative or quantitative changes in the blood. It frequently is the result of great, excessive and long-continued exhaustion. The method of treatment is not always the same as it must depend upon the cause. Improved nutrition is the only source of permanent cure; but by prompt application of the proper remedies we may avert impending danger. In certain rare instances nitroglycerine is advisable, as when the heart is over-worked by resistance at the periphery. Digitalis increases heart power as well the resistance at the periphery. If given even as a diuretic it may produce suppression of urine. Strophanthus has the power of increasing heart action without increasing resistance at the periphery and therefore preferable to digitalis.

The results of nitroglycerine are immediate and no other except ether acts so quickly. He had resorted to hypodermatic injections of ether

and had prolonged life for hours. He gave the details of a case which he had seen with Dr. Prentiss. The man had been sick several weeks and as they entered the house were told that he was nearly dead. They found him unconscious and almost pulseless. They gave him several hypodermatic syringefuls of ether. Shortly after he sat up in bed insisting there was nothing the matter and that he would be out in a day or two. Injections were continued for several hours until the ether lost its power. They informed their patient that he could only live a short time, but he said he was not ill. At this time his intellect was clear, but he died in less than an hour. He had seen individuals apparently dead resuscitated, sit up and then die in a few hours. Ether, however, lacks permanency but will bridge over cases in which we cannot expect a cure. Cure must be through recovery of the heart muscle which is best attained by general treatment. Alcohol is a food as well as a cardiac stimulant and may sustain life for days.

DR. KING thought it was unwise in Dr. Busey to permit his patient to sit up, as the horizontal position in all such cases is desirable so as to keep as much blood as possible in the brain. Ether is one of the best immediate stimulants.

Some months ago, at the suggestion of Dr. Harrison, he gave strophanthus to a man suffering from heart failure following recovery from alcoholism and opium poisoning without beneficial effect. Every one that dies has his heart stop, so that it is difficult to say that it is heart failure as defined to-night. We should anticipate those cases liable to die of heart failure as in diphtheria, pneumonia and typhoid fever. Dr. Watson aptly calls such cases asthenia. In many cases the heart fails because there is not bulk of blood. Every fever patient should have cool water *ad libitum* so as to keep up the fluidity of the blood. It is easily absorbed by those who cannot assimilate milk. Water is the only substance that can be absorbed without previous digestion. Undoubtedly many fever patients are killed for the want of water. By giving fluids and water we maintain the bulk of the blood.

DR. PARSONS asked Dr. Roy if his patients complained of the head symptoms usual in nitroglycerine.

DR. ROY replied that he usually stops the nitroglycerine as soon as its physiological effect was manifest.

DR. HOEHLING stated that the crisis in an illness of the Emperor of Brazil was bridged by hyperdomatic injections of caffein.

DR. FRANZONI was called to the chair.

DR. HAGNER: Very often the term heart failure is used where it is not applicable. Dr. Watson was right when he advised to provide against this accident by recognizing those symptoms which cause it. He believed that patients were

often killed by trying to reduce high temperatures regardless of the condition of the heart. In scarlet fever, rheumatism and some other diseases a high temperature is normal to their course. As long as the fever is in safe limits let it alone, but when it goes beyond then antipyretic remedies should be given. It seems to be the fashion in febrile diseases to lower the temperature by some of the powerful antipyretics without regard to the condition of the heart. He then gave the details of a case, aged 3 years, that had taken forty grains of the sodium salicylate instead of four grains of the ammonium carbonate for pneumonia; its temperature fell in a few hours from 105° to 97° and he found it in collapse. Free stimulatives and hot baths caused prompt reaction. We should be careful in diseases where heart failure is coming on or liable to do so, not to use powerful remedies to reduce temperature and get the conditions favorable to collapse. He agreed with Dr. Busey as to the treatment of heart failure, but disagreed with Dr. Roy. Digitalis acts as a *vis a tergo*, while nitroglycerine as a *vis a fronte* dilates the peripheral vessels and removes the resistance. In pneumonia, with heart failure, he would advise atropia to stimulate the respiratory center, digitalis to increase heart power, nitroglycerine to reduce peripheral resistance and strychnia as a cerebro-spinal stimulant and for its general tonic effect.¹ Dr. Busey would also suggest spartein as a valuable cardiac stimulant. It is true as Dr. King stated that too little water may often induce heart failure, but more discretion in its use would seem advisable than was implied from Dr. K's remark. Dr. King was right in saying that we should anticipate heart failure, and the President was right in recommending such means as might prevent it. Dr. Hagner had spoken of a normal temperature for fevers and had cited scarlet fever. This was new to him and he would not accept it as true. Scarlet fever has all phases of temperature from a safe low to an unsafe high degree. All febrile diseases vary in temperature from a low to a very high degree. Dr. Hagner insisted that no means should be taken to reduce the temperature of a febrile disease unless it passed beyond its normal course. An intermittent fever frequently has a temperature of 105° , and is not considered dangerous. So that it is not always the height that is alarming but the continued high temperature and its effect upon the powers of resistance. We may meet with an elevation of 104° to 105° without any cerebral manifestations, while again a height of only 102° or 103° may cause the most violent cerebral symptoms. The individual power to resist high temperatures is as variable as disease. It is unwise to adopt a routine practice not to interfere unless

¹ This was really all the indications that could be met by physiological therapeutics.

the temperature should rise above a certain point. In typhoid fever we do not depend on the height as much as the difference between the morning and evening temperature and the duration of the fastigium in the use of antipyretics. In intermittent fevers there is a period of absence of fever; but in continued fevers there are only remissions and they are not always sufficient to permit recuperation. Many other circumstances also guide us in the method of treatment. Heart failure during or after continued fevers is more frequent than before the employment of the newly discovered antipyretics. Drugs that act as quickly and powerfully as these antipyretics are dangerous; and death is frequently due to their indiscreet employment. They should be used in hyperpyrexia only to reduce dangerously high temperatures. He had seen collapse produced in an adult from two and a half grains of antipyrin and the good judgment and prompt action of the nurse only saved the patient's life. He resorts to such treatment only where other means failed. The cold water coil was safer and more effective. He had regulated the temperature for weeks by it.

In a case of typhoid fever with dangerous cerebral manifestations he had employed the ice water coil constantly applied to the man's head for weeks. Recently in a lady suffering from typhlitis followed by general peritonitis the ice coil was continuously applied to the abdomen for ten days.

DR. MAGRUDER said the point advanced by Dr. King to keep the patient in the recumbent posture was a good one. In some patients who were, apparently, doing well the slightest exertion, as moving them or making a physical examination, might overtax the weak heart and cause its failure. He would emphasize the importance of absolute rest and recumbency in those conditions accompanied by feeble heart action. In diphtheria the erect posture is too frequently assumed for purposes of examination. He advised the administration of the spiritus etheris nitrosi in $\frac{1}{2}$ oz. doses every half-hour or hour in threatened heart failure, and said that he had gotten as good results as with nitroglycerine. He would indorse the advice of Dr. Hagner to give strychnia in conjunction with nitroglycerine. Stimulating food and alcohol with strychnia would sustain life and prevent a recurrence of the syncope in many cases.

DR. ROY read extracts from a letter written to him by Dr. Bartholow in answer to some questions on failure of the heart. By dilating the arterioles of the heart he nourished it by sending more blood to it. Digitalis does not increase the nutrition of the heart, but overworked it.

Stated Meeting, October 23, 1889.

DR. A. F. A. KING, IN THE CHAIR.

DR. R. T. EDES presented a heart showing:

Emboli of the Left Ventricle and Right Auricle; and a Kidney Showing an Embolus.

DR. E. M. SHAEFFER presented *Two Hundred and Five Biliary Calculi*, varying in size from $\frac{1}{8}$ to $\frac{1}{2}$ in diameter, found at a post mortem.

DR. D. S. LAMB presented a specimen with the history of a case of

LYMPHADENOMA.

This specimen is a mass of enlarged and altered glands of the neck. The alteration is found on microscopical examination by Dr. Gray, of the Med. Mus., to consist in the development of true secreting gland structure in addition to the adenoid structure; and in places to a thickening of the reticular tissue. There is also some formation of the embryonic blood vessels as found in sarcomas. The words lymphadenoma and lymphosarcoma are used indifferently by some authors for the same condition; but Dr. Gray prefers to call this "lymphadenoma." He considers this form of tumor to be *rare*; that many so-called lymphadenomata are simply lymphomas; without true secreting gland structure.

This mass involved the glands on both sides of the neck and between; and both superficial and deep. It extended slightly over the body of the lower jaw and deeply under it; extended up to the mastoid process and backwards around the neck; extended well up on both sides of the pharynx, surrounded the larynx and great vessels; and extended downwards over the upper part of the first piece of the sternum, and over the right clavicle. It was much the larger on the right side and was somewhat nodulated. It was generally white and firm; but in places soft and purulent; in several places there were openings in the skin where pus had been discharged. Below the large mass were a number of isolated ones in the subcutaneous tissue, the size of peas. Much of the superficial portion of the tumor as well as the skin itself was dense and brawny.

There was some oedema of the tissues over the upper part of the chest showing interference with the circulation. There was some oedema in the upper lobes of the lungs. The heart was normal. The blood was of good color. The liver was normal to all appearances; the gall bladder nearly empty. The spleen very small, only 3.5 oz. The stomach, intestines and kidneys normal. There was old pelvic peritonitis and a fibroid of the uterus. But there was no involvement of any other glands than those of the neck; showing the local character of the disease. The body was well nourished. The body of the lower jaw left side for about one inch in length was thickened but no connection was perceptible between this enlargement and the tumor except that of mere contact. I was unable to get the jaw or examine it more closely.

The subject was a mulatto woman, age 50 at

death, who had been for a time in Freedman's hospital. She was removed to her home in South Washington, where I made the *post mortem* examination. I had expected some history of the case by this time, but have not received any definite information. I presume that there must have been pressure by the mass on important organs; on the jugulars causing cerebral congestion; on the air passages causing dyspnoea; on the oesophagus causing dysphagia; and there must have been interference with the movement of the jaw.

I do not look upon this case as one of Hodgkin's diseases, a name which I understand should be properly applied to a group of symptoms due to a group of symptoms due to a *general* affection of the lymphatic glands.

DR. D. S. LAMB also presented

REPORT OF NECROPSY OF A CASE OF CEREBRAL EMBOLISM (?) AND HÆMORRHAGE.

Two portions of the cerebrum of a woman about 70 years old. One from the left side shows extreme wasting and flabbiness of the posterior part of the superior parietal and much of the supramarginal lobules, beneath which the substance was unusually firm though porous. The other portion, from the right side, showed recent subarachnoidal hæmorrhagic clot in the fissures and on the surface of the ascending and superior parietal convolutions, beneath which was a recent hæmorrhagic clot and cavity the size of a hickory nut. Also a gall bladder containing several hundred small calculi. Also kidney much atrophied. Also uterus much atrophied and containing in its wall several fibroids which had undergone partial calcareous degeneration.

The history of the case was that the woman, white, aged about 70, was admitted to the Woman's Christian Association Home of this city from Providence hospital, about September 1, 1887. She had been weak-minded for years, probably since the lesion of the left side of the cerebrum described; which was probably caused by embolism. While at the Home she kept her bed except as she rose to defecate and urinate; she had control over these acts. She was unable to answer questions or give any information of herself; in reply to questions she simply repeated the last words of the same. There was not apparently any paralysis; no defect of vision recorded. September 7, 1889, she had sudden and severe pain on right side of head. On the 10th she passed into stupor and so continued till death on the 14th. No paralysis nor spasm.

She seemed to require and had but little medical attention; had however, a nurse, one of the old women of the Home.

At the request of Dr. Mary Spackman, who was at the time the medical attendant, a *post mortem* examination was made by Dr. Lamb; the skull

was thick; *dura mater* attached along the longitudinal groove; subarachnoidal fluid increased in quantity; there was a depression over the left lesion described; hæmorrhage on the right side at the base calcareous, the left carotid artery especially twisted and curved. The lungs much pigmented. Slight thickening of the aortic valve. Liver dark and bloodless. Gall-bladder stuffed with calculi, its wall thickened. Spleen small; artery calcareous. Stomach and intestines normal. Kidneys contracted and atrophied. Uterus as described. Ovaries and fallopian tubes atrophied.

The mental deficiency seems to have been due to the lesion of the left side; the death to that of the right.

DRS. ROBERT REYBURN and A. W. TANCIL read a paper on

TRAUMATIC TETANUS; RECOVERY.

Willie Scott, colored, æt. 14 years, No. 817 Twenty-fourth Street, N. W., some time about the last weeks in July, stuck a nail in his foot. The wound healed under domestic treatment, but a short time subsequent thereto, about one week, while playing, it broke out again, which caused quite a hæmorrhage, but it got well and attracted no further attention.

August 18, 1889, I was called to see him. Complained of pain and stiffness in the jaws, neck and shoulders; pulse a little rapid, temperature about normal, appetite good and bowels regular. R. Sodii salicylas, 3ij; tinct. colchici em., 3j; tinct. digitalis, 3ss; syrupi aurantii, ad 3ij. Sig. A teaspoonful in water every four hours. Do. R. Pulv. ipecac et opii, gr. viij. Sig. Take at bed hour.

August 19, morning, found him apparently better; wanted to go to work, to which I would not consent, and directed the same treatment continued.

August 20, morning, complained of pain in the stomach, other symptoms about the same as on August 19. R. Morph. sulphat., gr. j; aquæ camph., 3j. M. Sig. 3j every four hours. Pulv. ipecac co. discontinued.

August 21, morning, he had suffered intensely all night. Muscles of back, trunk, abdomen and extremities rigid. Abdomen retracted, features distorted, and frequent paroxysms of tonic spasms. Mouth or jaws very near closed; could not bear to be touched. The entire body, from head to feet, so stiff that we had to handle or move him by the head. Pulse 110, temperature 101.5. R. Quinæ sulphat., 3j; elix. sim., 3ij. M. Sig. 3j every four hours. R. Bromidia, 3j. Sig. A half teaspoonful in water every two hours.

August 21, afternoon, had slept some, was more quiet, temperature much reduced, pulse ditto, and wanted something to eat. I directed them to give him milk (good rich milk) and beef-tea alter-

nately and liberally. Quiniae and bromidia continued, and must be kept absolutely quiet.

August 22, morning, temperature and pulse near normal, had had short intervals of sleep; had taken milk and beef-tea quite freely and doing fairly well. But, as the bowels had not moved since the 17th, ordered *R. Elaterii*, gr. j; *hydrarg. chlor. mit.*, gr. xij; *pulv. sacch.*, \mathfrak{g} j; *m. div. pulv.* No. xij. Sig. One powder every six hours until bowels moved. After taking second powder bowels moved freely.

August 22, afternoon, temperature normal, other symptoms about the same as in the morning, said he felt better. Ordered bromidia continued, and the quiniae mit. to be given three times a day. I was sent for between 10 and 11 on the evening of the 22d. Found him suffering what seemed almost death—intense agony. But as I had once before succeeded, in a similar case, with bromidia, I determined to push that remedy or combination. *R. Bromidia*, \mathfrak{z} ij, of which I gave a teaspoonful in water immediately, and thirty minutes after gave another teaspoonful, and within thirty-five minutes from second dose he was sleeping quietly. I remained with him about a half-hour longer, during which time he slept. I then directed a teaspoonful of bromidia to be given every two hours and left.

August 23, morning, had spent a fairly good night, sleeping most of the time; had taken milk several times. Still rigid from head to feet. Paroxysms of spasms not so frequent, but cramps in chest and abdomen most threatening. Respiration difficult, temperature 95° , pulse rapid and feeble. But said he felt better, and if it were not for the cramps in stomach and chest, would feel first rate. *R. Milk* punch every four hours, beef-tea to be given liberally. Bromidia, a teaspoonful in water every hour. Quiniae sulphat., gr. iij ter in die.

August 23, afternoon, pulse stronger and more steady, respiration not so rapid, and a great deal more comfortable. Temperature about normal, has, generally speaking, quite improved since morning. Ordered one powder of the elaterii, calomel and sugar to be given at night, and to be repeated every second day if needed. Other treatment continued.

August 24, morning, temperature and pulse fair. Cramps in chest, back and abdomen still severe and threatening. Muscles not quite so tense, but he is still as stiff as a board and can not bear to be handled other than by the head. Had slept a good deal during the night and taken nourishment quite freely. Ordered quiniae continued (gr. iij ter in die), and a teaspoonful of bromidia to be given as often as necessary to control the spasms; in other words, that he be kept continually under its influence except while taking nourishment, which I directed them to give liberally.

August 24, afternoon, Dr. Robert Reyburn saw him, in consultation with me. He was much more comfortable, doing well. Upon Dr. Reyburn's suggestion ordered, *R. Tinct. gelsemii*, gtt. x, to be given every four hours. Bromidia continued, viz.: a teaspoonful as often as needed for control of the spasms. Beef-tea and milk to be given liberally. This line of treatment was continued with but slight variation, the patient in the meanwhile making slow but gradual progress toward recovery, and on September 16 he was able to sit up in a chair. September 22 he could walk around the room by pushing a chair before him, and by September 25 he was able to go where he pleased.

The gelsemii was continued in diminished doses, viz.: gtt. viij to gtt. vj to none. The bromidia was continued in full doses, \mathfrak{z} j, but longer intervals, until September 26, when all treatment (medical) ended. Total amount of bromidia taken, \mathfrak{z} xv, and \mathfrak{z} ij. A. W. TANCIL, M.D.

The above case is a typical example of the more chronic variety of traumatic tetanus, and is interesting because it illustrates very well what I believe to be the correct method of treatment of such cases.

The reflex action of the great nervous centres, and more especially the spinal cord, is so immensely exaggerated in tetanus that the slightest noise, the exposing the patient to a current of cold air, or even a slight movement of the patient, may develop a fatal spasm either of muscles of respiration, or some other of the group of muscles which control functions necessary to life.

Unfortunately, I have had too much of an experience in this disease from the year 1862 to the present time, to have seen every variety of treatment tried, including all the narcotics and nerve sedatives of the Pharmacopoeia, also the continued use by inhalation of chloroform and ether. Anæsthetics, however, while they for a time do seem to modify and control the spasmodic contractions of the muscles, have in my experience never effected a cure. The only treatment that I have found to be reasonably successful is morphia given in large doses and in combination with bromide of potassium, but in order to do any good with the remedy it must be given in double or triple the ordinary doses and continuously; in other words, you must keep the patient in a condition of semi-narcotism all the time, for days or weeks if necessary.

In the treatment of the above case it was found absolutely necessary to disregard the ordinary rules of dosage and to give with a liberal hand the bromidia in quantities sufficiently large to keep the muscles relaxed. Several times during the early stages of the treatment of the case, the attempt was made to diminish the doses of the powerful agents used, but the aggravation of the

trismus and the painful and powerful contractions of the muscles of the abdomen and extremities compelled a return to the larger doses.

Patients suffering from traumatic tetanus as a rule, in the cases I have seen, die from violent contractions of the respiratory muscles which stop respiration, and of course they die very suddenly and unexpectedly.

Another most important point in the management of these cases is to insist upon the most absolute rest and quiet. The patient is to be placed in the darkest and most secluded corner of the house, away from noise and secure from the well meant but often fatal kindness of visitors and friends. Many a case has been doing well, when the excitement of a strange face or a visit from a friend, will bring on a spasm which may instantly prove fatal.

ROBERT REYBURN, M.D.

DR. SOTHORON had had several cases of traumatic tetanus. In one case he kept the patient in a semi-comatose condition with potassium bromide, chloral, hydrate and morphia; as soon as this was stopped the convulsions recurred. He then covered the patient's abdomen with a tobacco poultice and kept repeating it for several days. Recovery took place and he attributed it to the relaxing effect of the tobacco.

DR. SCHAEFFER: The effect of tobacco on this case will add to the value of this drug. It may be consoling to tobacco chewers to know that someone had been studying its effects on tuberculous families and had found that those who were addicted to the tobacco habit lived long lives while those who abstained from its use died early in life. The antispasmodic properties were recognized.

DR. REYBURN: The reflex excitability is so great that we may be compelled to use the most powerful narcotics and push them to their physiological effects. The patient should be kept absolutely quiet because the slightest noise sometimes brought on violent spasms.

DR. KLEINSCHMIDT said that he treated a case with Dr. Appleby about the time of the introduction of chloral which recovered. A colored woman was sick two days when he saw her. In one of the convulsive attacks she had broken out two of the front teeth so that there was little difficulty in administering medicines. She was given 20 grains of chloral every hour the first day, every two hours the second day, every three hours the third day, and every four hours the fourth day until recovery. The second case to recover was that mentioned by Dr. Sothoron. In a third that recovered he had given similar doses of chloral. In another case the episthotonos was well marked and death took place before any amount of chloral had been taken.

DR. FRANZONI stated that Brown-Séquard attributed the poor results obtained from potassium

bromide to the custom of administering it in too concentrated doses.

DR. ACKER said that this theory had been denied by the best authorities.

DR. EDES spoke of the antidotism between chloral and strychnia. If strychnia were given the fatal dose of chloral was much larger than if given alone. The potassium bromide should be well diluted. He had taken 100 grains of potassium bromide to test its effect upon the blood-vessels of the retinae and an ophthalmoscopic examination had failed to detect any change.

DR. J. FORD THOMPSON had tried all kinds of treatment, but that of potassium bromide and chloral was the commonest. Statistics do not prove that there are any specifics. At one time calabar bean was supposed to act specifically. Some years ago he saw two cases in powerful colored men, which occurred within a few weeks. One was caused by a bad fracture and the other by a slight punctured wound of the palm. Both had to be held by strong men during the convulsions to keep them in bed. One died of exhaustion. The other was given potassium bromide and chloral and hypodermatic injections of morphia. He supposed he would die, but recovery took place. He saw such cases in all ages and conditions of life. If the mere relaxing of the spasms cures then why not use woorara? He had given chloroform for hours without permanent effect.

The pathology of these cases is the interesting point. There has been more written about this condition than any other. Verneuil's theory is that it is due to direct or indirect infection from the horse and is caused by a specific bacillus.

The proper treatment is preventive. If all wounds are treated properly there will be fewer cases of tetanus. Most of the injuries are suppurating when the physician is called to see them. If all wounds were thoroughly cleansed and then dressed antiseptically or aseptically there would be less tetanus. The wound should be treated to avoid every kind of infection. In Halle years ago the mortality was 40 or 50 per cent.; now it is only 2 per cent., and some of these causes are considered unavoidable. This result may be attributed to improved antiseptic methods.

In nail wounds he would advise incision, cauterization and antiseptic dressings to exclude the germs of disease, and he would venture to assert that there would be very few cases of tetanus.

In some cases death is so rapid that it is difficult to explain. In one case a carpet tack caused tetanus, and the patient died in less than forty-eight hours. In the West Indies they die of tetanus in a few hours.

DR. KLEINSCHMIDT agreed with Dr. Thompson in adopting means of prevention. That it is due to a specific bacillus capable of inoculation

has been proved. Its habitat is supposed to be garden earth, and as most cases occur from wounds in the feet and hands, it is reasonable to suppose that the dirt conveys the germ.

DR. A. F. A. KING asked Dr. Thompson if tetanus ever occurred in countries where there were no horses.

DR. THOMPSON replied that he did not know.

DR. SCHAEFFER stated that Dr. Watson mentioned cases which die from tetanus in the East Indies a few hours after receiving cuts on the hands. Pasteur claims to have discovered the remedy in inoculation.

DR. REYBURN stated that "Senn's Surgical Bacteriology" contained excellent drawings of the tetanus bacillus.

DR. EDDES asked if it were more common in the colored than the white.

DR. REYBURN replied that such had not been his experience. During a warm and moist summer there were a great many cases among white boys caused by the toy-pistol.

BOOK REVIEWS.

THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. By HENRY ASHBY, M.D., M.R.C.P., Physician to the General Hospital for Sick Children, Manchester; Lecturer and Examiner in Diseases of Children in the Victoria University, and G. A. WRIGHT, B.A., F.R.C.S., Assistant Surgeon to the Manchester Royal Infirmary and Surgeon to the Children's Hospital. London and New York: Longmans, Green & Co. 1889. Chicago: A. C. McClurg & Co. Pp. xix, 681. Price \$6.

This work presents many valid claims to our attention. The product of the industry of a medical practitioner and a surgeon, it covers the whole range of medical and surgical diseases incident to childhood with a thoroughness not often found in works of this character. It is based largely upon observations made by the authors in the institutions with which they are connected, and we are quite willing to concede the claim of the writers that it is founded on personal experience and observation and is very far from being in any sense a compilation from other works. It aims at being thoroughly practical, and to this end pathological details are largely eschewed. The illustrations, which are numerous and well executed, are, for the most part, original with the work, being reproductions of photographs of cases coming under the observations of the authors. A large number of temperature charts of instructive cases are reproduced, and indeed throughout the book there is plain evidence of personal labor on a large scale, the work itself being the furthest

possible removed from commonplace reproduction of the achievements of other authors. The volume is modestly dedicated to junior practitioners, but it is entirely safe to say that it fully deserves the careful attention of all classes of medical readers.

A MANUAL OF ANATOMY FOR SENIOR STUDENTS. By EDMUND OWEN, M.B., F.R.C.S., Surgeon to St. Mary's Hospital, London, and co-lecturer on Surgery, (late lecturer on Anatomy) in its Medical School. "In a practical point of view anatomy is of no use unless it can be realized in the human body."—*Francis Sibson*. With numerous illustrations. London and New York: Longmans, Green & Co. 1890.

This manual of 520 pages is just issued by the well-known firm of Longmans, Green & Co. While the field of surgical anatomy has been covered by many able writers we think the aim of the author has been so well accomplished that his work will be found a valuable addition to our medical and surgical literature. It covers the essential points in the entire range of anatomy, and is well illustrated. It also traverses the domain of the physician and the specialist. It is especially suggestive and will be found of practical value as a book for ready reference. The advanced student and the practitioner will find it well suited to their needs. Surgical diseases tersely and ably considered; fractures and dislocations, malformations and deformities are treated of, and all important operations satisfactorily described. The circulatory system, its pathology and treatment, form a specially interesting chapter. The specialties are well represented in the work, and much of valuable suggestion will be found for the general practitioner who more or less must deal with subjects which have fallen so largely to the care of specialists. In hospital practice this volume will be a practical reference book, not only in the surgical wards but also in the medical and special departments. It comes to hand from S. A. Maxwell & Co., Chicago. Price, \$3.50.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume II. Second Session, held at Nashville, Tenn., November 12, 13, 14, 1889. Published by the Association. 1890.

In addition to a list of the members of the Association and its officers this volume contains the Constitution and By-Laws of the organization. The minutes of the Annual Meeting are given in full, followed by the President's Address, delivered by Dr. Hunter McGuire, of Richmond, Va., who concluded his able paper with these words: "As members of our beloved profession, let us strive to be first in scientific attainments, first in

integrity, first in high purpose for the good of mankind." Twenty-eight papers representing the writings of as many representative medical men are included in the volume. The mechanical execution is exceptionally fine, and this annual volume is a credit to the Association.

MONTHLY NURSING. By A. WORCESTER, A. M., M.D., Fellow of the Massachusetts Medical Society, Physician to the Waltham Hospital. Second Edition. New York: D. Appleton & Co. 1889.

This is a practical work which embodies the essentials contained in a series of lectures given by the author at the Boston Lying-in Hospital. It treats of the qualifications of nurses, care of patients, preliminary to confinement, and the arrangement of the lying-in chamber. The stages of labor are described and the care needed in normal cases of confinement. The diseases of children are next considered. The chapter entitled "The Baby" is a valuable one—as is also the one upon "Emergencies." The subjects of Pregnancy, Abortion, Miscarriage and Premature Births are well considered, and an appendix containing many valuable recipes for the preparations of foods and drinks suitable for the sick room add to its value. It has reached its second edition and is for sale generally. It comes to us from A. C. M'Clurg & Co., 117-121 Wabash Av., Chicago. Price, \$1.25.

MISCELLANY.

LETTERS RECEIVED.

Dr. R. J. Dunglison, Philadelphia; Dr. C. F. F. Corsch, Wells Beach, Me.; Dr. G. W. Davis, Dr. S. O. L. Potter, San Francisco, Cal.; Dr. G. W. Countryman, Mellette, S. D.; Dr. W. H. Brock, Athol, Mass.; Dr. E. Le Fever, Mountville, O.; Ward Bros., Jacksonville, Ill.; Dr. F. W. Dimmitt, Oneida, Ill.; Dr. B. H. Harris, Groveland, Ill.; Surgeon-General U. S. Army, Washington; Dr. E. Stuver, Rawlins, Wyoming; Dr. E. Kerr, Downingtown, Pa.; Dr. L. B. Grandy, Oxford, N. C.; Dr. L. Wickham, Paris, France; The Drevet Mfg Co., Thos. Leeming & Co., Reed & Carnrick, New York; Dr. C. R. Earley, Ridgway, Pa.; Dr. H. T. Rennolds, Baltimore; Parke, Davis & Co., Detroit, Mich.; Horlick's Food Co., Racine, Wis.; Dr. J. A. Hinton, Friendship, Tenn.; Michigan Agricultural College; Dr. T. J. Whitten, Nokomis, Ill.; Dr. A. V. Wendel, Newark, N. J.; Dr. C. N. Hewitt, Red Wing, Minn.; Dr. A. N. Ferguson, Winnipeg, Manitoba, Canada; Dr. F. L. Moyne, Pittsburgh, Pa.; Dr. J. E. Chancellor, Rockridge, Va.; Dr. J. A. Robison, Chicago; Dr. M. L. Mayo, Huntington, W. Va.; Dr. A. S. Tilford, Hall, Ind.; E. K. Nash, Montrose, O.; The Hospital, London, Eng.; Malted Milk Co., Racine, Wis.; Robinson-Pettet Co., Louisville, Ky.; Dr. W. D. Rohl, Sheldon, Ind.; Daniel Mahony, Philadelphia; A. Ramseyer, Lima, O.; Dr. E. A. Christian, Pontiac, Mich.; Dr. E. L. Jones, Florence, Ala.; Dr. W. S. Watson, Matteawan, N. Y.; Dr. R. L. Nourse, Washburn, Wis.; N. D. Guerry, Trinity, Miss.; Pearl C. Lewis, Catskill, N. Y.;

Wm. C. Clemison, Warrenton, Mo.; Longmans, Green & Co., The American & Continental Sanitas Co., Manufacturers Advertising Bureau & Press Agency, New York; Dr. L. Woodruff, Alton, O.; Dr. E. D. Ferguson, Troy, N. Y.; Dr. J. L. Williams, Boston, Mass.; Dr. H. H. Grant, Louisville, Ky.; Dr. W. W. Hester, Chicago; Dr. W. C. Dorset, Columbia, Tenn.; Dr. A. L. Wilson, Indianapolis, Ind.; Dr. J. B. Deaver, Philadelphia; Dr. C. N. Udell, Blakesburg, Ia.; Dr. J. E. Michael, Baltimore, Md.; Geo. S. Davis, Detroit, Mich.; Dr. G. O. W. Farnham, Beatrice, Neb.; Dr. C. R. Henderson, Deasonville, Miss.; Dr. W. H. Geddings, Bethlehem, N. H.; Dr. W. C. Dabney, White Sulphur Springs, W. Va.; Dr. A. H. Nichols, Boston, Mass.; Dr. H. Cushman, Bassett, Neb.; Dr. B. A. Watson, Jersey City, N. J.; Dr. J. T. Everett, Grinnell, Ia.; Dr. W. Nelson, Dallas, Tex.; S. S. Murdock, Boston, Mass.; Rio Chemical Co., St. Louis, Mo.; R. H. Rush, Germantown, Philadelphia; Dr. W. I. Thayer, W. M. Hoge, Brooklyn, N. Y.; Netherlands American Steamship Co., New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 5, 1890, to July 11, 1890.

Capt. John de B. W. Gardiner, Asst. Surgeon, having been found incapacitated for active service by an Army retiring board, and having complied with par. 12, S. O. 155, June 10, 1890, from this office, is, by direction of the Acting Secretary of War, granted leave of absence until further orders on account of disability. Par. 3, S. O. 153, A. G. O., Washington, July 2, 1890.

Capt. Samuel Q. Robinson, Asst. Surgeon, is relieved from temporary duty at the U. S. Military Academy, West Point, N. Y., to take effect upon the arrival there of Capt. W. Fitzhugh Carter, Asst. Surgeon, and will report in person to the commanding officer, Ft. DuChesne, Utah Ter., for duty, relieving Capt. Curtis E. Price, Asst. Surgeon. Capt. Price, on being relieved by Capt. Robinson, will proceed to Ft. Wadsworth, New York Harbor, and report in person to the commanding officer of that post for duty, relieving Capt. Robert B. Benham, Asst. Surgeon. Capt. Benham, on being thus relieved from temporary duty at Ft. Wadsworth, will report in person without delay to the commanding officer, Ft. Hamilton, New York Harbor, for duty. Par. 12, S. O. 153, A. G. O., Washington, July 2, 1890.

By direction of the Secretary of War, the leave of absence on surgeon's certificate granted Capt. Marcus E. Taylor, Asst. Surgeon, in S. O. 45, Div. of the Pacific, June 13, 1890, is extended five months on surgeon's certificate of disability, with permission to go beyond sea. Par. 6, S. O. 159, A. G. O., July 10, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending July 12, 1890.

Asst. Surgeon J. E. Page, ordered to hospital, Mare Island, Cal.

Asst. Surgeon R. M. Kennedy, ordered to the League Island Navy Yard, Pennsylvania.

Surgeon P. H. Rixey, granted leave of absence for fifteen days.

Asst. Surgeon F. N. Ogden, promoted to be a P. A. Surgeon.

Asst. Surgeon S. Stewart White, promoted to be a P. A. Surgeon.

Asst. Surgeon L. W. Atlee, granted three months' leave of absence.

Medical Inspector T. Woolverton, await orders to the U. S. S. "Philadelphia."

P. A. Surgeon P. A. Lovering, await orders to the U. S. S. "Philadelphia."

Medical Inspector D. McMurtrie, granted leave of absence for thirty days.

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No. 4.

ORIGINAL ARTICLES.

FEEDING IN THE WASTING DISEASES.

A Report Presented to the Committee of Dietetics of the American Medical Association at its Forty-first Annual Meeting, 1890.

BY EPHRAIM CUTTER, A.M., LL.D.,

M.D. HARVARD, 1856, AND UNIVERSITY OF PENNSYLVANIA, 1857.

AND

JOHN ASHBURTON CUTTER, M.D., B.Sc., F.S.Sc.
OF NEW YORK CITY.

First Section—Tuberculosis Pulmonalis, One Hundred Cases.

Second Section.—The Fatty and Fibroid Degenerations, Fifty cases.

Third Section.—Male Neurasthenia, Fifty Cases. The following is an abstract:

FIRST SECTION—STATISTICS OF ONE HUNDRED CASES OF CONSUMPTION TREATED BY FOOD PLANS TO BE HEREAFTER DESCRIBED.

Résumé.

Series 1. Non-arrests, twenty-one cases.

a. Cases that were not improved, nine.

b. Cases that were on partial diet, or were too irresolute, or had bad surroundings, financial, climatic, etc., twelve.

Series 2. Partial arrests, thirty-nine cases.

a. Cases that followed the treatment faithfully, nineteen.

b. Cases that did not follow the treatment faithfully, nine.

c. Cases that had bad surroundings, that died of pneumonia, etc., eleven.

Series 3. Permanent arrests, forty cases.

a. Tuberculosis, thirty-two cases.

b. Pretuberculosis, eight cases.

In 1880, the senior writer presented to the American Medical Association, an article entitled, "The Salisbury Plans in Consumption," with the full text of seventy cases. To-day we come before you not to laud or condemn Dr. Salisbury, but to simply give you in the concrete, what has been brought before us in our daily work with consumption of the lungs, as we have attacked the disease believing it to be first and last a food disease, climate and other causes being entirely secondary, and therefore this contribution will be of the more value to this Committee of Dietetics.

SERIES 1.—NON-ARRESTS, TWENTY-ONE CASES.

a. Cases that were not improved, nine.

i. *Illustrative Case*.—(See Transactions American Medical Association, 1880, pp. 333-408, case 7.) August 28, 1877, M. H. S., fisherman, Lanesville (Cape Ann, Mass.), aged 33 years. Father died of phthisis. Mother living; been sick two months. He states that he took cold and went out fishing. Was exposed and took more cold; except two attacks of typhoid fever, was perfectly well before. General appearance bad. Cough is constant and severe. No hæmoptyses. No dyspnoea except on going up stairs. Severe pain in shoulders. Appetite poor. Bowels regular. Has lost flesh and strength. Night sweats copious. Pulse weak. Hands shake badly.

Physical Signs.—Dulness on percussion and crackling over right upper third front and lower third back; feeble inspiration, almost flat on percussion; no crackling, but the respiratory murmur was heard underneath. Inspection of the blood revealed spores and spore collects in abundance. Fibrin filaments thickened. Red corpuscles adhesive, sticky, irregularly massed, pale in color. Mr. S. went upon the treatment with quinine. It was his intention to come up from the Cape again, but he was unable to do so, and despite the means used, he died not long after.

Remarks.—At the time it did not seem to the writer that his case was hopeless. Still, his history teaches that one must not trust too much to first appearance. It is a disadvantage to see a patient only once. It was reported that he faithfully used the diet. It is well, however, to compare the case with some of the very sick ones that were cured as noted in series 3; the lesson taught is simply that the physician should never refuse to take a case, and should never be too free in his promises of recovery.

b. Cases that were on partial diet; were too irresolute; had bad surroundings, financial, climatic, etc., twelve.

Illustrative.—(See case 1, loc. cit.), widow, aged 43 years, small sized, thin, anxious and nervous. Asthmatic complication, old abscesses of the mediastinum, diarrhoea, dyspepsia, sleeplessness, severe cough, dulness on percussion with constant crepitant râles over both upper thirds

front. Great dyspnoea at times. Abnormal valvular sounds of the heart. No albumen in urine. Altogether the most distressed and suffering case of consumption I had seen for some time. The effect of the animal diet, baths of mineral acids, and quinine, was to relieve, in a measure, the night sweats and abdominal pains. But the appetite turned against the animal food and it would often be rejected by vomiting. She was obliged then to carry out the régime only partially, particularly as she laid all her bad feelings, distresses and sickness to her food or medicine, and never to her disease. She suffered also greatly from prolapsus of the uterus, aggravated by the severe coughing. This case was not relieved by the special treatment recommended. The weakness of mind and body, induced by the presence of organic disease in the thoracic and abdominal viscera, was too great to be reached by perhaps any treatment. Indeed, just here it may be stated that no pretention is made toward cure of any but one-third of the cases;¹ but to insure that proportion it is necessary to have the treatment strictly carried out.

The present case was one in which there was really no hope and only adopted as "A drowning man catches at a straw." It is thought best here to give simply the bad and good cases together, and let the reader judge for himself of the value of the data thus derived.

SERIES II.—PARTIAL ARRESTS, THIRTY-NINE CASES.

a. Cases that followed the treatment faithfully, nineteen.

Illustrative Case.—(See No. 21, loc. cit.) Mr. W., aged 60, in 1874 had been consumptive for two years; his occupation was that of an overseer of an umber paint mill. He had with a cough, marks of increasing debility, as loss of flesh, animation and courage. There were marked dulness on percussion, crepitant and sonorous râles over the upper part of both lungs; the blood also presented fibrin filaments and spores. It is some years since he has lived upon animal food diet; his wife has faithfully prepared the choicest meats for him, and what is more has encouraged him in pursuing the uncommon diet. The case was rather unpromising at first, owing to its long standing and extent of tubercle infiltration. He is, however (1876), comparatively well. Cough is hardly perceptible. The physical signs are still to be detected, but with less marked characteristics. He attends to his business as usual. Says he expected to die, in which expectation the community shared. The blood shows great diminution in the foreign admixtures. 1879, still living but very feeble. In October he died.

Temporary Arrests.

b. Cases that did not follow the treatment faithfully, nine.

Illustrative Case.—(See case 23, loc. cit.) Miss C., aged 22, residence Cape Cod. Seen July, 1875; amenorrhœa, cardiac trouble, dulness on percussion in upper part of both lungs, expiratory râles in same location. Blood was full of evidence of disease as shown by the enlarged white corpuscles, the spores and fibrin filaments; she had been under the hypophosphites of lime and soda. She was put upon the strict diet and mineral acid baths, and was removed to New Hampshire. She was thin in flesh and unable to walk an eighth of a mile from prostration under the necessary effort. For the next three months was not herself thoroughly convinced of the utility of the measures now proposed, still her friends were, and by means of their influence she adhered closely to diet and baths. Immediately there was an improvement in the cough, in flesh and strength which continued. She walked two miles readily. Returned home for a visit in November. Here the diet was abandoned, ate everything she liked and took medicines. Remained at home four weeks. She ran rapidly down, lingering till she felt "She could not live two days." Returning to New Hampshire she improved but little. Remained there till April, 1876, when being very much worse, she returned home to die. Died in 1878. This case shows the power of the system to resist the disease, even when not following up the treatment; this resistance ought to be more relied on.

c. Cases that had bad surroundings; that died of pneumonia, etc., eleven cases.

Illustrative Case.—(See case 27, loc. cit.) In October, 1874, Mrs. —, a woman with a very young child, that especially cried by night and kept its mother awake, was very pale and thin, coughing severely and raising largely. There was diminished resonance on percussion and crackling throughout the upper third of right lung. She adopted the diet and acid baths. In four months the cough was very slight. The physical signs diminished. Her softened lung tissue dried up. The appearance improved so much that a casual observer would have called her well. All the time she suckled her infant. Owing to the hard times she was obliged to relinquish her diet and would not accept it as a gift. Immediately she began to fail and died in the course of six months. The improvement in health kept pace exactly with the imposed diet. When she ate bread the cough returned; the expectoration was copious. The night sweats reappeared. This shows markedly the relation of animal food to consumption. It is well worth knowing, for if these things "are done in the green tree what may be done in the dry?"

SERIES III.—ARRESTS MORE PERMANENT IN CHARACTER AND MIGHT BE TERMED CURES IF OCCURRING IN OTHER DISEASES.

a. Tubercular, thirty-two.

¹ This was 1880, now we think that more can be cured.

b. Pretubercular, eight.

Illustrative Case.—(See case No. 53, loc. cit.) Mrs. Wall, Cleveland, Ohio, June 21, 1877. Present condition: Suckling a four months' child. Active and doing her own housework. Looks like a person in ordinary health. Coughs occasionally. No sputa. A good sized, rather flat-chested woman thirty-five years of age. *Chest:* Dulness on percussion and cavernous respiration over left upper third back. Dulness over the whole left back. Elsewhere normal. *Blood:* Inspection showed normal looking blood. Red corpuscles not massed; are distinct, well defined, rouleaued, no fibrin or mycelial filaments; white corpuscles not enlarged.

This report is more interesting when taken in connection with the following history: In February 1865, Mrs. Wall had been sick in bed four months with the last stages of consumption. She was emaciated to a skeleton; weight, sixty pounds; usual weight one hundred and thirty pounds. Her physicians, who were regularly educated and skillful men, pronounced her left lung "gone"—that is, riddled with tubercle that had softened and broken down in such a manner that the pulmonary substance was removed; had become useless and of course they gave a decidedly fatal prognosis. There was at this time a great caving in or flattening of the anteroposterior diameter of the chest due to atmospheric pressure conjoined with loss of lung substance. At this time she came under Dr. Salisbury's care. The patient's mother caused the treatment to be faithfully and assiduously followed out. Improvement slowly followed. In four months' time she was able to be out of doors and visit the city. After a time she resumed her profession as school teacher and taught successfully for four years. Five years ago she married and has borne three children, all healthy and vigorous. She likes her meat diet best, lives on it and works hard. The physical signs adduced show the marks of the ruin wrought in her lung and also show the tremendous power of food in managing or in affecting the course of organic pulmonary disease even in its third and hopeless stage. This history reads like fiction. November, 1888, we heard from her that she had continued in good health. A beef eater.

Illustrative Case.—(Unpublished.)—1882. Young man. Cavities in both lungs. Heart enlarged. Emaciated as badly as preceding case. Profuse hæmoptyses. Elastic and inelastic lung fibers in sputa. Blood, tubercular. Was treated very carefully on these plans. Was cured, *i. e.* his cough ceased; the lungs healed; the heart regained its normal size; he took on flesh and strength; went through Yale college; was graduated with honors. Is well and was seen by us May, 1890.

Pretubercular Cases Treated that May Come Under This Head.

Illustrative Case.—(See case 65, loc. cit.) In April, 1876, a young man eighteen and one-half years, complained of feeling weak and listless. He had nocturnal and morning cough, with slight expectoration. He was pale, thin, and losing flesh. Consumption was hereditary on both sides of the family. There were no physical signs of pulmonic lesion. Inspection of the blood microscopically disclosed abundant signs of mischief, such as: Fibrin filaments were marked in character; spores and spore collections; mycelial filaments; white corpuscles much enlarged and too numerous; corpuscles, thin, flabby, pale, sticky, outlines not cleanly cut, aggregated. These taken together with the history and the rational signs, induced a diagnosis of the pretubercular stage. Under the use of acid baths and strict diet, the sanguineous and other signs began to disappear, so that in a year he was enabled to proceed to Germany and study music. He has been a beef eater, *i. e.* eats more of it than people usually do; alive and well, 1890.

Rationale.

1. Tuberculosis is a systemic and not a local disease primarily.
2. Tuberculosis is a diseased condition or state due to the presence of yeast in the blood with its fermentative products.
3. The yeast is introduced into the blood through the alimentary canal from starch and sugar in excess, and in a state of fermentation.
4. The physical micrographical conditions found in the blood of tubercular cases constitute the peculiar morphology so often alluded to. The main features are as follows:
 - a. Spores of vinegar yeast.
 - b. Spore collects.
 - c. Fibrin filaments unusually large and prominent.
 - d. Enlarged massal white corpuscles. This enlargement proceeding from the white corpuscles being unusually fertile niduses of the vegetation, called entophytal, similar examples of which abound in algæ.
 - e. Deprivation of the red discs of their coating of neurine, thus rendering them sticky, adhesive and singularly inclined to aggregate themselves in confused masses. At the same time they lose their color, their clean-cut outlines and are diminished in number relatively and absolutely.
 - f. Thrombi formed of the fibrin filaments; of the corpuscles; of the spore collects.
 - g. All of the foregoing have been photographed with Tolles' objectives, from the one-fourth to his one-seventy-fifth.
 5. The vegetation may exist in a latent state.
 6. It may be transmitted from parent to child

in the milk, but the greater point of interest is in the tuberculous diathesis, produced by the same feeding in families for generations.

7. The morphology of the blood is commonly present some time during one year before organic disease. In other words, there is a new physical sign of the pretubercular state; the senior writer has a monograph on that subject alone, illustrated with many microphotographs.

8. Food, then, is the agent of tremendous power that causes tuberculosis.

9. The treatment is based on the idea of removing the cause by ridding the blood of the presence of the yeast and its fermentative products by a process of starvation.

10. Tubercle is a secondary product—a result from embolism caused by the minute thrombi of fibrin filaments—of the massal corpuscles and of the spore collects, and also from mechanical and chemical effects of the embolism on the nutrition.

11. The breaking down of the tissues comes from a necrosis caused by this overloading of them with the products of fermentation.

12. The yeast is also found in the alimentary canal, on the skin, in the sputum, etc.

13. Flour has been raised into bread by the dejecta of third stage consumptives.

14. The progress of the case is best watched and studied in the morphology of the blood. The spores are diminished, the filaments removed. The enlarged massal white corpuscles are reduced in size to normal proportions; the red discs acquire their normal color, covering, and clean outlines; the fibrin filaments are hardly visible. Thus the red discs dispose themselves in the normal manner, the more perfectly as the cure proceeds. Any deviation in the regimen is indicated by the increase of the abnormal morphological elements in the blood. As the blood improves, usually the general symptoms improve, *pari passu*. We have often witnessed, under treatment, the disappearance of râles of all kinds, night-sweats, emaciation, the reduction of the heart to normal size and frequency of beats, simply because of taking away the load it had to carry, when the blood was filled with emboli, and was ropy and sticky.

15. This diagnosis by blood examinations does not exclude ordinary physical explorations; it supplements them; we find that the ordinary idea of this diagnosis in the profession is that hæmology is like urinology, and all that is necessary, is to take specimens of blood, just as we do urine, and base all our diagnosis of tuberculosis on such examinations. The very suggestion of this demonstrates how far the proposer is from having a true idea of the subject; the evidence must be collected with the least possible interval of time between the removal of the blood from its stream to the stage of the micro

scope; the capillary circulation is to be used, not the venous or the arterial; take blood from the radial or ulnar side of the forearm, by slight puncture with scarificator or scalpel; do not prick the end of the finger; the student must study the morphology of the skin as well as that of the blood.

16. There are other diseases in which the normal blood morphology is changed, to-wit: rheumatism, cystinæmia, syphilis, ague, etc.

17. This rationale explains the cough, where it is not due to local irritation in the air-passages, such as hyperæmiæ, ulcers, infiltrations, reflex irritations, to the presence of carbonic acid gas in excess; sometimes it is wonderful how diminishing the fermentation does away with the cough.

18. This rationale explains hæmorrhages as the result of local action of the vegetation on the glue tissues, the connective tissues being softened, disintegrated and broken down by the products of fermentative changes.

19. It explains the night-sweats as due to the interstitial necrosis of tissues thus throwing more work on the skin; hence the injunction to take good care of the skin, and help the lungs while they are being healed.

20. The emaciation and loss of flesh and strength are only the results of the great tissue destruction going on.

21. The sputum must be studied for lung fibers, for the various crystals that are found in asthmatic conditions and also the gravel, granular and encysted.

22. Old fashioned or fibrous consumption is due to holding of the yeast products in the stomach, to the gradual paralysis of the lungs, with the consequent hyperplasia of the connective tissues, and to the deposit of gravel in this hyperplasia of the fibrous tissues; in this condition the blood morphology is not so much altered; the diagnosis must be made on general grounds; the treatment is practically the same, however.

23. The condition of the liver and kidneys can be determined by watching the urine; it should be tested at least twice a week and kept at a specific gravity of 1015 to 1020, free from bile, odor or deposit.

24. Physiologists say that man cannot live on beef alone; the chemist says that beef contains all of the elements found in the tissues of the human body. We say, that in cases of consumption, Bright's disease, uterine fibroids, etc., where the special case has indicated a rigid diet of beef, such a dietary has been ordered and some of the patients have lived on it alone for four years; thus the dictum of the physiologist is upset.

25. It has been sneeringly said that all that was needed if the ideas here given as to consumption are true, that a man prescribe beef and hot water; yet the senior writer had his son study

the general sciences four years, medicine four more, and special cases three more years, before he was willing to leave his practice in his care; the art of treating chronic disease, even by positive food plans and judicious medication, is an extremely hard one to acquire.

26. Air is food. Yet consumptives have been cured in the rawest and dampest climates, and so many times that we must go behind the old idea that climate was the only cause of consumption; granted that bad climate helps to cause the disease, and so also will worry, trouble, grief, assist toward death; the sending of patients away from home comforts to die elsewhere is not the thing to be advised. If home comforts, good air and the proper food can be combined, by all means do it. This is written with the knowledge that pulmonary disease has been arrested by climate. But our aim is to cure the cases wherever they are, because many cannot afford to change their climate or live the remainder of their lives in the Adirondacks or Colorado.

27. Remove from the atmosphere of the patient all doubters, sneerers and those that argue, but never cure; agnostics and nihilists, not content with helping no one, they will endeavor to pull down your work. More permanent arrests could have been secured of these one hundred cases if the patient had been left alone.

28. While encouraging the patient at all times and in all emergencies, give him to understand what he is fighting; that he must not waste his nerve forces by needless thought and worry, but to hold on persistently and wait for nature to do the work; each case is a law unto itself; this can be seen by the study of the cases herein recorded; we are finite; death is certain; no man will ever cure 100 per cent. of his cases, may we say of any disease.

29. If all will take hold firmly, at least 50 per cent. of tubercular cases can be cured, judging from our own clinical experience. Now that consumption is called a curable disease, the great load is lifted off and much more will be accomplished.

30. All cases of pretuberculosis ought to be cured, because here is a condition where there has been no destruction of tissue; this is where the exception to section 28 comes in, if, the practitioner will diagnosticate the condition, treat scientifically, and the patient obey orders.

31. All physicians who say these plans are foolishness, and who treat their cases by morphine, maltine and whiskey, we ask for publication of cases and the percentage of cures.

32. The diagnosis of tuberculosis by blood examination, often negatively points out the seat of trouble to be in the heart or uterus, or perhaps some other organ; also, cases of uterine disease complicated with tuberculosis should not be allowed to go untreated, but in making examina-

tion, the physician must go over the whole field, and find out all of the disease; some of the cases in this series, years ago, would have been benefited if their uterine disease had been treated; granted the cause is systemic, for bad food is an etiological factor of uterine diseases, while treating systemically, use all of the modern means to attack the local pelvic troubles.

33. If men complain and say this dietary is too rigid, we will only reply that the cases have demanded it, and will be very thankful when consumption can be cured by more pleasant means than we have employed.

34. Lastly, as to Koch: In 1876 all of the morphology of consumptive blood was photographed with Tolles' objectives to the highest power, his one seventy-fifth. These microphotographs have been exhibited here and abroad, and we find none that equal them; this is written advisedly.

Bacteriology is but an extremely small portion of the micrological world. Such algologists and phytologists as Professor Paulus F. Reinsch, of Erlangen, and Dr. Fr. Ecklund, physician of the first class of the Royal Navy, Sweden, endorse this work as covering a much larger field than bacteriology does. If the proof was to be placed entirely on the results, then bacteriology must hold its head in shame, as no cures have been effected by it; but we are willing to controvert Koch on scientific grounds, and maintain the position that he has told but one-half the story; that botanists have been fighting for years as to whether bacteria were simply babies of the fuller fledged vegetations; that the bacillus was photographed in 1876; that the ability to diagnosticate pretuberculosis and tuberculosis by blood examinations, and the means thus afforded of watching the cases, are worth immeasurably more than the diagnosis of consumption when the disease is apparent to all.²

SECOND SECTION—THE FATTY AND FIBROID DEGENERATIONS.

1. Bright's disease, twenty cases.
2. Fibroid tumors, eighteen cases.
3. Cancer, twelve cases.

SERIES I.—BRIGHT'S DISEASE, TWENTY CASES.

We do not consider any case full-fledged Bright's disease unless there are in the urine albumen, casts and fatty epithelia.

We are continually getting cases which may have any one or two of these three signs. Such cases are hovering on the border line of health and well-marked disease, and are very amenable to treatment. Such wavering from health would oftener be detected if physicians would make more thorough examinations of the urine. Tak-

² We are ready to demonstrate, by microphotographs, facts as to the relations of the bacteria to alcoholic and acetic acid plants.

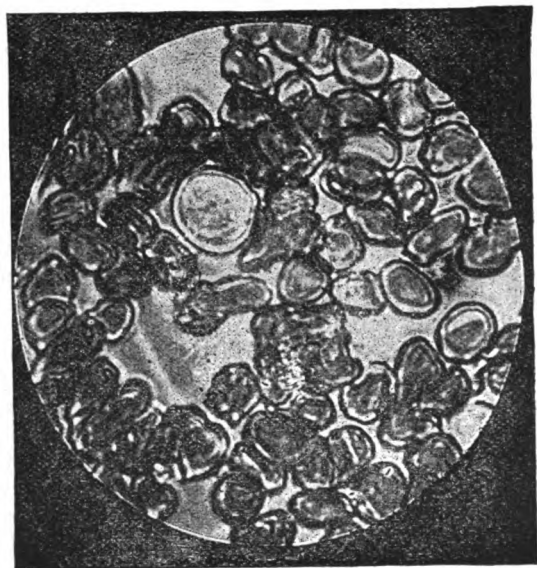


Fig. 1.

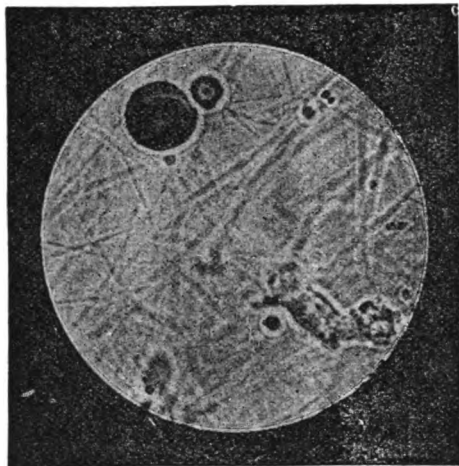


Fig. 4.

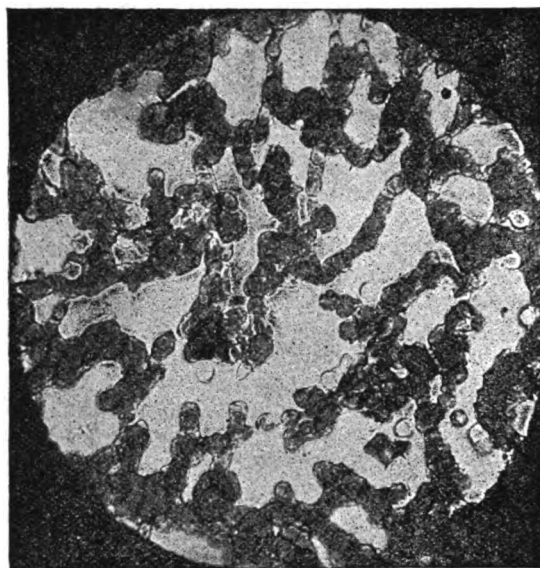


Fig. 3.

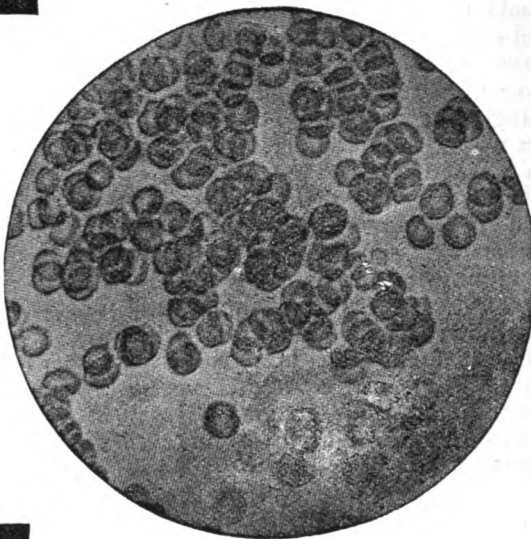


Fig. 2.



Fig. 6.



Fig. 5.

FIG. 1.—Microphotograph, 1.50 inch objective, Tolles. E. Cutter, 1896. Healthy blood.
 FIG. 2.—Microphotograph, 1.16 in. objective, Tolles. E. Cutter, 1883. Healthy blood.
 FIG. 3.—Microphotograph, 1.16 in. objective, Tolles. E. Cutter, 1896. Tuberculous blood under treatment showing improvement and attempt to rouleaux tightly.
 FIG. 4.—Microphotograph, 1.50 in. objective, Tolles. E. Cutter, 1896. Fibrin filaments in tuberculous blood.
 FIG. 5.—Sick,ropy and adhesive blood, tuberculous. 1.16 in. objective, Tolles. E. Cutter, 1896.
 FIG. 6.—Three enlarged white blood corpuscles, the fourth ruptured with spores vinegar yeast. 1.75 inch objective, Tolles. First ever taken; by Dr. Ephraim Cutter and G. B. Harriman, D.D.S., of Boston, 1896.
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ing six specimens from six consecutive days, it is wonderful to see the variance from day to day.

The following is an abstract:

Cases that would have been diagnosticated earlier if they had been more fully examined.

1. 1883, woman, 30. Called tuberculosis; blood normal; urine albuminous, and contained casts and fatty epithelia; sputum copious. Bright's disease lungs and kidneys; not treated. The urine had not been examined before in this case.

2. Man, aged 50, 1885. Bright's and diabetes. Disease had not been detected. Treatment of no avail; too late.

3. March, 1885. Called nervous prostration by a homœopath. When urine was examined later by senior writer, disease found to be Bright's. Treatment by her cousin of no avail, though a Harvard graduate and thoroughly equipped; again too late.

Deaths.

4. The late Dr. Elsberg. Bright's disease of lungs and kidneys. Great improvement. Death on resumption of old modes of life.

5. Bright's disease of kidneys and lungs. Improvement. Death from handling his own case, thus eating wrongly, overworking and allowing himself to be poisoned by sewer gas.

6. March, 1889; woman, 50. Bright's disease lungs and kidneys. Death September from pneumonia. Disease somewhat arrested.

7. Bright's disease of kidneys; 1885, man, 50. Convulsions like that of a puerpera. Chloroform to neck. Urine cleared up by diet. Took cold from riding in open carriage. Death from bronchitis.

8. Man, 50; October, 1885. Bright's disease kidneys; nearly blind. Case improved; very nervous; services discharged; death in a few months.

In Progress.

9. Man, 60; 1886. Bright's disease kidneys. Great amelioration of pains and improvement of urine. April, 1890, disease returning, and will probably die if work is not given up at which he labors constantly.

10. Woman, 40; 1883. Bright's disease kidneys. No improvement till she came into our family. Then followed diet, and urine cleared up. Disease has returned, though alive April, 1890. Not on treatment.

Cases cured; that is, that are well April, 1890, with kidneys acting rightly.

11. Man, aged 46; January, 1886. Bright's disease kidneys, cirrhosis of liver and enlarged heart. Considered absolutely hopeless.³

12. 1880. Acute fatty degeneration kidneys, placenta and cerebral blood vessels. Has since borne two more children.

13. Woman, aged 35; October, 1885. Not as serious as some of the cases.

14. Woman, aged 25; 1886. Unusual large number of casts and fatty epithelia in urine.

15. Woman, middle-aged; 1887. Had decided to transfuse blood. Well April, 1886.

16. 1879. Man, aged 60.

17. 1881. Man, aged 60.

18. 1884. Man, aged 24.

19. Girl, 13; 1884. Scarletina; menses appeared when eruption was at its height. Two years to get well.

20. Woman, 46; 1886. Fibrous consumption, Bright's disease kidneys and small fibroid tumor of womb. Tumor gone, cough gone, urine normal, April, 1890.

SERIES II.—FIBROID TUMORS, EIGHTEEN CASES.

The following is an abstract:

Tumors Held in Statu Quo.

Three cases. The first: Immense abdominal fibroid, woman aged 60. Shall soon apply galvanism by deep abdominal puncture.

Second: Small tumor; would go away, probably, if woman would allow herself to rest.

Third: Large abdominal tumor, which did not diminish till galvanism was applied by abdominal puncture, though diet helped her very much.

Tumors Reduced and Patients Made Comfortable.

Five cases, all uterine; four, large tumors; the fifth, smaller and back of uterus. All greatly improved; tumors arrested and reduced. These would be called a cure if done by the Apostoli method of giving galvanism; (which method, by the way, was employed by the senior writer in his first operation in 1871).

Tumors That Disappeared.

Ten cases. Seven, uterine fibroids; four, large abdominal tumors; three cases of smaller abdominal and pelvic tumors.

One case of tumor of the breast; one of fibroid of the stomach; one of tumor of the neck which might be called tuberculous.

SERIES III.—CANCER, TWELVE CASES.

The following is an abstract:

1. Cancer of the face, so called by eminent men in the American Medical Association at the Philadelphia meeting, 1847. Treatment by knife and caustic had only made disease return and sore more ugly. Diet of bread and milk removed tumor and healed sore.

2. Tumor of scapula as large as a pint bowl. In the practice of the late Dr. Amos Twitchell, case 1 of this series. Diet of bread and an infusion of water dock. Disappearance of tumor.

3. Attendant, E. Cutter. Woman, 40; uncle dead of cancer; her case, cancer of womb. Disappearance of growths by rigid diet of beef.

4. E. Cutter, attendant. Woman, aged 50.

³ The result is understood to be according to the reading of the heading.

Cervix enlarged laterally to sides of pelvis; rough and bleeding; opium eater. Rigid diet; iodoform locally. Great improvement. Death on discontinuance of treatment and resumption of opium.

5. E. Cutter, consultant. Cancer of carpal bones and axillary glands; 1882; said to be hopeless by attending physicians. Amputation at middle third of forearm; animal food diet. Alive 1890. Disease in axilla quiescent.

6. E. Cutter, attendant. Woman, 35. Cancer of womb. Improvement and arrest of disease. Discontinuance of treatment; death.

7. Woman. Attendant, E. Cutter. Sister case 6. Knobbed enlargements of os and cervix uteri. Strict diet; disappearance of tumors; alive eight years later.

8. E. Cutter, attendant. Cancer of womb; discharged from hospital to die of that disease, 1882. Reduction and disappearance of disease by diet. Well April, 1890.

9. Attendant, E. Cutter. Woman, 40. Four tumors back of womb. Valvular disease heart. Tumors disappeared by rigid diet of beef; this in 1876. Woman alive and well April, 1890. Her father had died of cancer of stomach.*

10. Attendant, E. Cutter. Disease in both breasts. Tumors diminished in size by diet. Caught cold from exposure; pleurisy; cancer cells found in fluid aspirated from chest; death.

11. Man, aged 60. E. and J. A. Cutter, attendants latter part of illness. Cancer of larynx. Tracheotomy had been done; wore tube; suffered much pain. Wished to try food treatment. Did little good, as he could eat but little, and that finally fed to him through a catheter in fluid form. Literally starved to death. A man of great heroism, the late Dr. Wm. S. Hurlocke, of Philadelphia.

12. E. Cutter, attendant. Woman, 40; 1881; vomitus composed of a black grumous fluid; tumors of womb and stomach. Relieved and in fair health April, 1890.

Rationale.

We would have liked to have presented more of our cases of Bright's disease, tumors and cancer; but space does not permit. A few words must be given as to our ideas in attacking these cases mainly by food.

The word nephritis gives us little light as to the real causes of Bright's disease. We would say as to our belief, that the disease is commonly an expression of a systemic condition; either a fatty or a fibroid degeneration. That the fatty may be acute or chronic; the fibroid most always chronic. Some have thought because they found ganglia fattily degenerated that the renal disease was the sequence. But we ask what was the cause of the ganglionic degeneration?

The answer is: In the food eaten, in the air

breathed, in the modes of life, the clothing worn, the amount (too much or too little) taken of exercise; our ways of thought, of carrying on our business; whether we are intemperate, etc. In these long continued and steadily acting causes is to be found the explanation—and until the causes of disease are understood, few men will treat them intelligently and successfully.

The cases that we have treated have been studied as far as we were able, on all sides; we wished to know all that could be found out about the patient's life. This may seem too simple, but gentlemen, concrete things, not abstract, cause disease. But to be more particular, let us consider the food part of the question. Starch and sugar contain but three chemical elements; yet they make up a large part of the diet of many.

The old saying is that "you cannot get blood out of a stone." Certainly phosphorus and nitrogen, to say no more, cannot be made out of carbon, hydrogen or oxygen; so on the side of chemistry alone, if a man or woman will persist in feeding on starch and sugar, they must not expect nature to break her laws and change her elements into others.

But, the excessive feeding of starch and sugar will in time produce the carbonic acid, and later on acetic acid fermentations in the alimentary tract. Carbonic acid gas is a poison, it paralyzes and kills men and animals when breathed; yet how many live with their stomachs bloated with this gas, wonder why they have heartburn, and their families mourn when they drop suddenly in the street from heart paralysis due to this same gas; or they keep on their way, living in spite of their vicious feeding, and the long continued paralysis may result in a fibrous degeneration of the lungs, the stomach, the liver, the kidneys or the spinal cord; or nature, instead of building fibrous tissue under this slow-going paralysis (for it is well to remember that nature does her best always), will lay in fat in these tissues and keep the bulk of them intact as long as she can.

A man on treatment for locomotor ataxy was much improved. Meeting a friend on Fifth Avenue, he said: "I want to go into Delmonico's and eat a big dinner; will it hurt me?" His friend was a physician, but knew nothing about his treatment; he however said "It will not hurt you." The man followed his advice, filled himself up with fermenting and fermentable food, with the result that the ataxia came back immediately—why, because the spinal cord was temporarily paralyzed by the carbonic acid gas. The same thing we have seen within a year in the case of a boy on treatment for the same trouble; his fond mother let him have ice-cream and a big dinner, and his legs were almost immediately paralyzed.

April, 1890, this boy is as bright and lively as most any of his age.

* For full account of these nine preceding cases see Albany Medical Annals, July and August, 1887, "Diet in Cancer," E. Cutter.

The various fibroid tumors are also instances of degeneration. Nature is doing her best, but she cannot lay down healthy tissues, so she builds with the poorest, to wit, the fibrous tissue. If this is not so, gentlemen, why did our cases recover? Granted we kept them quiet (when we could) and used every medical means our humble knowledge permitted us to prescribe; yet the main idea, and held to firmly, was that these were diseases of nutrition and must be attacked on that ground.

Cancer.

A woman of fine mind was attacked by two tumors in her 60th year, one just anterior to the right ear, the other below the right breast. By careful attention to diet, so that she lived plainly, by the use of alcohol baths, and by keeping her life in as even a tenor as possible, she lived till she was over 90, and then died of her disease which was called cancer. The tumor on the head had extended to the external angle of the eye; the tumor on the breast killed her.

A boy *æt.* 10 years, an orphan, picked up a precarious living setting up tenpins in a billiard alley; he was beaten with one and thrown out; the disease (*fungus hæmatoides*) commenced; when found, he was on the railroad track. The town authorities supported him as a pauper, and the disease before his death took in a great part of his body.

A woman carried for thirteen years a large abdominal multilobular, subperitoneal and pelvic fibroid. One early spring she was compelled to move into a house situated in marshy lands which had not been used during the winter. She took cold, was overworked, and the disease changed into cancer, attacked the bladder and caused death.

A young man of 30, who had lived a riotous life, died in great agony from no known cause. Post-mortem showed at least one hundred tumors in the peritoneal cavity, on the bowels, liver and other organs. The disease had invaded the vertebræ and the lungs. This man had money enough to buy good food but used the wrong.

A woman, *æt.* 35, was deserted by her husband. She sued for divorce and finally won her suit. In the meantime cancer appeared in the womb; the disease was arrested and held back for two years, but finally caused death.

In 1887 (*Albany Medical Annals*, July and August), the senior writer defined cancer to be "Tissue under Mob Law;" "Tissue Rioting." Tissue that the body systemic cannot govern, and hence the reversion to embryonic types and the frightful results sometimes seen in this overthrow of the law of the body systemic.

The blood, *i. e.* in our work, which extends over many years, does not show morphologically any causes; in the end it is impoverished and corpuscles changed, but we must say with all candor that we do not consider that cancer is a blood

disease but a tissue disease. This is confounding perhaps our present ideas, but disease has many phases and we must not look on these matters from one side alone.

You may call if you please the cases that recovered not cancer; but the fact remains, that they were very sick people before the treatment and are not now. Let this committee take this idea, that *cancer is tissue under mob law*, and then attack it under all of the chances offered to promote the nutrition, and the members report in another year, the results. We could give you more cases, those under treatment at the present time. One case where the right breast had been removed; the disease returned, it was burnt out with cautery and finally came under our care last August, with a sore 4 inches long, 4 inches wide and 1 inch deep, pouring out the most filthy and stinking discharge. April, 1890, this woman is still alive; the sore is smaller, the discharge less. The treatment has been a rigid diet of chopped broiled beef, the application of tannic acid and quinine ointment to the sore; these applications agreeing better than anything else. Hæmorrhage is now not frequent. Still, her chances of recovery are very small. May, disease increasing.

We leave this part of our subject till treatment is considered.

THIRD SECTION—NEURASTHENIA IN MALES.

Where often the patients objectively appear like consumptives—occurring amongst business men and students, and is due to improper feeding.

We had intended giving statistics of fifty cases, but our report has grown to too large proportions to give these cases.

A preliminary report on this subject was presented to the Richmond Medical and Surgical Society, January 23, 1890, by the senior writer, and published in the *Virginia Medical Monthly* for February, 1890:

Some thirty years ago the writer was secretary of the Middlesex (Mass.) East District Medical Society, and, on being requested by me to do so, one of the members, Dr. —, kindly stated his case to the Society, and asked for opinions and treatment. It dealt entirely with neurotic symptoms, which varied from time to time, and showed a lack of nerve force without any organic disease, which could be detected. The case was a poser; no expression of opinion nor of treatment could be drawn from the members. The doctor himself was a bright, careful, intelligent observer; and his relation showed that he had skillfully treated himself up to the then present state of knowledge.

After a series of cases had been worked up for several years, on which this paper is based, Dr. —'s case occurred to mind, and he gratified me by sending, at my request, seven one ounce bottles of morning urine voided on seven successive days. These specimens, when subjected to physical exploration, *showed the presence of a protoplasmic or colloid discharge*, which, in other cases, had been to me a sufficient evidence of one cause of male neurasthenia, and which it is proposed to explain.

Morphological Evidence.—This physical sign is found in the morphology of the urine. (See "The Clinical Mor-

phologies," E. Cutter, New York, 1888, p. 45.) It is not that observers have not noticed this discharge; they have, still they have regarded it of no pathological significance. Where we differ from them is that *we do regard it as a valuable diagnostic sign of male neurasthenia*. The way this difference of view came about was as follows: Since 1880 we have made a practice of studying the morphology of the urine of patients, *sometimes daily for weeks and months*. But coming upon neurotic cases, in which this colloid discharge was the only appreciable lesion, and finding that when such cases were treated and the catarrhal condition was removed, they always improved, and so long as the patient would follow out directions, the improvement continued, the senior writer was led to take the position here given, and I feel convinced that this complaint is a very common one, occurring often in old and young business men and students who are apparently well, save that their complaints of irritability, pains, sometimes excruciating, making them express themselves in terms which appear, to those most interested about them, whimsical, nonsensical, or, as we used to say in our boyhood, "hypoey." And I might remark here that I now think that, if these cases I knew in my boyhood, and were known to the whole community in which they dwelt as "hypoey," could have had the benefit of what is now understood, they would have passed from the opprobria which rested upon them by proving that there was a physical foundation for their condition, just as the women who had the same term applied to them in those days would have been relieved by finding some gynecological disease.

What to Look For.—In a case of male neurasthenia, which comes to you with a long story of aches, pains, weakness, and sufferings which appear so momentous that you wonder how the sufferer could be alive, and of having want of confidence in the medical profession to discover the seat of his complaint or to relieve him. Usually there is a degree of self-confidence and positiveness of statement in his own conviction, which reminds us of the same qualities we find in our better-halves. You look the case all over carefully; no lesion is found to explain such a great departure from normal innervation. You examine the urine; it appears clear, amber-colored, of good specific gravity, normal in odor, and all that is seen if you allow it to stand over night, is a light protoplasmic cloud, occupying, sometimes, the whole of the lower half of the vial. Or if in graduate glass measure, the cloud will swing halfway between top and bottom of urine. You cannot tell by the naked eye the characters of this discharge. It is put under the microscope, and the deposit is not made up of triple phosphates or urates; but if you use (as you had better use), a one-inch objective—which must be a good one, and the best are none too good—you will find, if the case is a typical one, collections of gluey (colloid), viscid matter, with no extra amount of mucous corpuscles or mucous epithelial cells, moulded in shapes like Indian clubs, varying in color from white to a brown; then, if you look further, skeins of colloid matter, curled up in fanciful shapes, sometimes separated into single filaments, and sometimes filling the field so full of the Hogarth lines of beauty that you cannot help expressing your surprise, perhaps to the discomfort of your anxious patient. Besides this, the discharge is sometimes diffused through the urine in a light, fleecy, unorganized cloud, which is sometimes difficult to recognize, *unless one is familiar with the protoplasmic studies*. Although these three forms are sometimes found together, still they are often found separate, so that, in enumerating them, we speak, *first*, of the protoplasmic; *second*, of skeins; *third*, of Indian clubs. *Next*, you should examine *seven successive specimens of seven days, i. e.*, one of each day, the first urine voided on rising. It has not seemed justifiable, in chronic cases, to base the diagnosis on one examination. For example, spermatozoa may be normally discharged once or twice

a month, and if you happen to get a specimen on the day of that normal discharge, it will be unwise to jump into the conclusion that the case is one of spermatorrhoea.

Spermatorrhoea, according to my experience of thirty-six years, is a rare disease, and the diagnosis of it is not complete unless the forms are found very much oftener than the normal discharge.

I may be wrong, but I do not consider the finding of the colloid secretion in one specimen evidence enough; it must be found in a majority of the discharges for the days of the week. When you study urine daily, you will find that it varies very much. For example, in the cases in question I have been very much surprised to find them alternating on some days with albumen, casts of the kidney tubes and fatty epithelia, which I regard as a diagnostic of Bright's disease.

In both neurasthenia and Bright's disease of the kidneys there is more or less paralysis of the parts involved. Some regard the fatty degeneration as a means of staying the effects of the paralysis. In other words, that the destruction of the tissue would proceed more rapidly were it not for the fatty degeneration. Still the neurotic symptoms differ. In simple Bright's disease of the kidneys there is little pain, and when it occurs it comes from rheumatism, and even the neurasthenia which is found sometimes along with the Bright's. The subject is not fully worked up in this aspect and hence I cannot speak so confidently, but it is a very interesting matter for consideration why the loss of albumen should not cause pain, when the colloid and perhaps albuminoid discharges which are found in the complaint under discussion assuredly does. One thing is certain, that neurasthenics thrive in the open air, and are worse in indoor air. A clergyman with this trouble said he would be all right if he worked on a farm outdoors, but he wanted to use his brains in his work. A diet substantially what is lined out below cured him so that he now works indoors and has recovered from impotency. But air is food. There is as much difference between fresh and foul air, as between fresh meat and old.

As to the Importance of this Form of Neurasthenia.—When first acquainted with this disease, I knew it was hard to bear, but did not think it was dangerous; but I have had patients die with it, and the autopsies showed no sufficient cause of death. The manner of going out was with a sudden failure of the heart as if there was not enough nerve force to run it; so I am led to take a more serious prognosis. The patients may live, like Dr. —, for thirty years, and though he considers that his life has been prolonged by the disease, because it has made him careful where he would have been careless, I believe there is danger, especially as the urine will alternate with albuminuria, fatty epithelia, and renal casts as before noted. This complaint is not due to sexual abuse, *i. e.*, as a sole cause; it is a food disease. The catarrh is mainly from the ducts of the prostate and spermatic glands.

GENERAL RULES OF TREATMENT FOR THESE SECTIONS.

Never Prescribe Raw Beef. *Preparation of broiled chopped Beef.*—Take beef from middle of the top of round of well fed cattle who were not over-driven just before death. In the handling

of these chronic cases too much care may not be observed in the selection of beef; life often hangs on the smallest detail.

Cut beef into cubes 1 inch by 1 inch by 2 or 3 inches. Free from fat and connective tissue by running it through the Enterprise chopper three times, each time cleansing the fibrous tissue from the plate at distal end of machine. Or use American chopper, which is noisy but is the best. Touch with the hands the muscle pulp as little as possible, as the human animal heat changes the character of the meat. Mould into cakes 1 inch thick and as many inches wide as needed. Broil over bed of live coals, charcoal is the best; oil or gas can be used. The beef when done should be of very dark color outside, and when opened present a reddish but not raw appearance. If the beef is rightly prepared it will be pleasant to the taste. The preparation must be done by a conscientious and humble individual: humble, because most cooks think they know everything about cooking when commonly they know nothing; and the one who has the work of getting ready this beef and cooking it has a position whose influence for good or bad cannot be overestimated.

Serve on hot water plate and season with pepper, salt, lemon juice, Worcestershire sauce, and in some cases butter.

Drinks.—Drink one pint of spring or distilled water that has been raised to the boiling point, one hour before each meal and on retiring. Cool the water to a comfortable temperature and drink slowly. Rest till meal time. Also after meals. The amount of water may be increased or diminished as the urinometer indicates. The urine must be at 1015 to 1020 specific gravity, free from odor, phosphates, bile or deposit. Drink clear tea or coffee at meals.

Baths.—Take ammonia sponge bath, 1 drachm to a pint of water night or morning. Or nitric acid baths, same proportion. Or aromatic sulphuric acid baths, same proportion. Quinine and salicin may be given in bath per skin. The acid baths, and especially with alkaloids, are indicated in sweats.

Exercise.—Passive, by massage so as to confer force. Also passive by riding in carriage. Also by riding on a walking horse. Do not wear people out with too much walking. Sick ones need their nerve forces for something else.

Drugs.—The rule may be laid down, *that the fewer drugs given by the stomach the better.* Yet cases come where there has to be the most careful exhibition of medicines. And at times these same cases will, after taking a great deal of medicine, improve almost immediately on stopping all drugs per stomach. The integrity of the stomach must be kept at all hazards. Treating these cases one learns how to wait.

Tonics.—Salicin; strychnia; pyrophosphate of

iron, cinchona; mixtures of the mild vegetable fluid extracts. English iodide of potash in small doses in asthmatic and rheumatic complications and in syphilis. Biniodide of mercury $\frac{1}{8}$ gr., an admirable cholagogue. Exsiccated sulphate of soda for constipation. Boneset, etc. *Each case is a law unto itself.*

In *consumption, tumors and cancer*, the closer patients adhere to a rigid diet of the chopped broiled beef, the better they will do. Sometimes the stomach rebels; this it does when the beef is not right, despite the protestations of the butcher to the contrary. On finally pressing the point, you will disclose that the beef has been kept too long.

Again, the stomach needs firm discipline—there is a hysterical element in some cases (the word hysteria has been poorly used), which must not be catered to and at times roughly handled. Prof. Wm. Goodell tells of how he stopped a patient vomiting by giving her a most cruel scolding. The rule is this, that the closer the lines are drawn, the better will the patient do; no man need expect to succeed treating chronic disease if he has to argue with his patients on the right or wrong of this or that procedure.

When the urine becomes normal, the blood in good order, the physician may bring in gradually some vegetable food, as toasted bread, boiled rice. It has been said we were too rigid, but gentlemen, each case is a law unto itself, and you must feed accordingly.

Bright's disease will respond better when patients are on rigid diet. Yet we have cases of business men who live on steaks and eat some vegetable food.

The same rule applies to neurasthenia. These cases usually occur in those that cannot leave their business. It must be remembered that when the supply of fermenting food is cut off, the patient, previously half drunk and paralyzed by carbonic acid gas and alcohol, slumps so to speak and lays all his trouble to his diet. At these times it is well to give first-class whisky or brandy to some cases. No wines, porter, ale or beer. Use Johnston's beef extract. The whites of eggs slightly poached.

At times patients have to eat entirely against the appetite. Usually it is not well to eat beyond the appetite. In cases where stomachic feeding must be stopped for awhile alimentation has to be done per rectum and skin. It is well for all to remember that even the most depressing of cases, where the prognosis appeared fatal, have recovered. Have all chronic cases go on treatment for a year at least and pay fee in advance each month.

We hope to present within a year to the profession a work entitled "Food and Disease for the Student and Practitioner of Medicine—Upon Tuberculosis, Bright's Disease, Tumor, Cancer, Rheumatism, Diabetes, Obesity, Uterine Disease,

Laryngeal Disease, Neurasthenia, etc., Exemplifying the need of the Use of the Microscope by all Practitioners of Medicine, and Illustrated by over One Hundred Microphotographs of Objects within and without the Body." The work to be sold by subscription only.

New York, The Ariston, Broadway and Fifty-fifth St., May 8, 1890.

DIET IN CONSUMPTION.

Read before the Committee of Dietetics of the American Medical Association, at its Forty-first Annual Meeting, 1890.

BY HERBERT JUDD, M.D.,

OF GALESBURG, ILL.

Until consumption receives less uncertain speculation, and more is written that is trustworthy of simple and satisfactory explanation, every physician has a right to his own opinion. Modern research has done much to turn the attention of the profession to this disease; further than this but little of practical value has been accomplished. With many physicians, old and young, the practice of medicine is, and always will be, but little if anything more than a matter of experiment. No claim is being made that medicine is a science, but that a common ground, a consensus of opinion, will be reached by the non-servile, practical brain-workers of the profession in the matter of reading and treating disease, cannot be doubted, when we acknowledge the rapid, intelligent improvements of the past five and ten years. The writer sprang from a pronounced consumptive type, and for the past twenty-five years has been on a sharp lookout for light upon this subject. To me it is certain that consumption is an acquired disease, and consequently preventive; that if more than 15 per cent. of all deaths in the civilized world can be traced to consumption, there must be a percentage of these fatal cases that can properly be classed as hereditary—what is generally understood as hereditary disease, that as physicians, if we turn our attention practically and intelligently to the living habits of people by whom we are surrounded and among those we daily labor, it becomes a matter of no surprise that consumption causes so high a death-rate. On every farm, in all the States, in all the villages and smaller cities, a permanent dwelling-house, built with any regard to sanitation, is a rare exception. No home can be found built after a plan of perfect sanitation. Thirty years ago, building residences upon sanitary plans was unthought of by the average citizen, and less is known now regarding the sanitary requirements of family dwellings among the teachers of our schools and colleges than is known of astronomy.

Go to our educational centres and look this matter up, and this statement will stand uncontradicted. The question of proper living, sani-

tation and diet is not entertained nor practically considered by the people of this country, or any country. They know nothing about these vital matters, and seem to care less. It is certainly our professional duty as physicians to plainly look this matter in the face and demand a better education of the people from the school-room and from the pulpit. That consumption is caused or acquired by errors of living long continued, there should be no doubt. This can be demonstrated as a fact, subject to simple proof among all classes of people claiming civilization. Nothing brilliant, startling or unknown, is in any degree attempted in this paper, but consumption, as a disease, properly considered, should plainly teach mankind that we are far short of perfect civilization. When interrogated regarding the question of extermination of the American Indian a late commander of our army, who was well versed in the affairs of men, replied: "The quickest, safest and cheapest manner of extermination would be civilization." If the most perfect individual type of the wild man of the west was bedded and slept and fed the same as the middle or better-to-do class of people in this country, I firmly believe that death would soon follow. That suboxidation or imperfect decarbonization of the blood will immediately begin and would rapidly terminate in tuberculosis. To me this fact was plainly demonstrated during the years 1866-1867 at the Albany Penitentiary. At that time it was customary for the Government to send Federal prisoners to this penitentiary, and the number consisted largely of negroes from the vicinity of Washington and other points in the South. They were brought to the prison and admitted as sound in body, and to the eye were of perfect physique. The death-rate among these negroes was large. Death followed rapidly within one and two years, and was without exception from tuberculosis. The clothing and food were ample. Possibly the change to the Northern climate had something to do with this disease and the death-rate, although the prison was always kept comfortably warm and no degree of exposure was required or occurred in the prison duty.

I have no data regarding the percentage of deaths; I do know, however, that this disease was acute in its character and was confined to this class of prisoners alone, and that the large number of deaths was remarked by the average medical student. Subsequent investigation convinces me that the air supply was much short of what was needed for healthy respiration—of what was naturally demanded by these negroes; and that the tubercular deposit, which occurred invariably in the lungs, was a direct result of suboxidation or decarbonization of the blood. At this time the Albany Penitentiary enjoyed the reputation of being the most perfect in sanitation

and discipline of any prison in the States and from this reason alone federal prisoners were sent there under contract by the Government.

When I was 1 year of age my father built a family dwelling in the village of F., State of N. Y. The house stands to-day, but little changed from the original plan among the best in the village. This house at quarterly meeting time would comfortably accommodate ten Methodist ministers. The family bedroom, in which the father, mother, and three children continually slept until the writer was 5 years of age, was by exact measurement six feet nine inches in length, and seven feet five and three-fourth inches in width, with a ceiling eight feet four inches high. This family bedroom had one window, three feet by five feet nine inches, and one door, six feet nine inches by two feet eight inches. Our food was principally vegetables, and I am now perfectly satisfied were of the fermentative type—vinegar and alcoholic fermentation, as described by Dr. J. H. Saulsbury and Drs. E. and J. A. Cutter, of New York. I am absolutely certain of this. Corn-meal was largely used, cooked into puddings with molasses. It was customary for each family to use largely of molasses. At one time I remember my father bought a hogshead of molasses in New York City, and hauled it himself from the railroad station thirty miles away. Cured codfish, pickled pork and corned beef were supposed to be always at hand in the cellar. Fresh meat was had once or twice a week from the butcher's cart, with no choice. To test the food quality of the corned beef and pork as then used, the writer procured the formula for making the pickle or brine. With the exception of "Turk's Island Salt," the directions were strictly followed. The brine was several times changed and everything done as instructed. The pork as thus pickled, and the beef as thus corned, have been subsequently used as food, and otherwise experimented with, and after a few weeks' time have been found nearly worthless as food, being eaten up by the brine or pickle. This manner of sleeping among families in this village was so common that when the children, innocent boys and girls, happened at the Friday evening exercises of the Institute, or at the Thursday evening prayer meeting, or at the regulation donation party, we were invariably called trundle-bed trash.

This village is the seat of a literary institute that was at this time liberally patronized, as it is now, by students from outside the county and State, and supported then, as now, four thrifty churches. My father was always industrious—a hard worker. He worked beyond his natural strength. He was a pew-holder in two churches, and subscribed liberally to foreign missions. This is a partial but truthful and painful statement of the common manner of living among a number of prosperous families attempting to raise

children, and I think that when Dr. Henry I. Bowditch labored in getting statistics relating to the death-rate from consumption in Massachusetts, had he gone inside of all the dwellings and investigated the manner of living at that time as to diet, alimentary and respiratory, he would not have been at a loss to have clearly and truthfully determined the legitimate cause of the enormous fatality from this disease. Possibly he would not have found the trundle-bed in every house, but from what I personally know regarding this matter, I am quite sure he would have found the condition of all the sleeping rooms occupied by growing children—its equivalent. My mother died of intestinal phthisis complicated; my father of fibrous phthisis, and four children—two brothers and two sisters—under 5 years of age, all from acute tuberculosis of the brain or intestines. My father's sister died of consumption, leaving two daughters. One died with diabetes, aged 12 years; the other is now living and in the best of health, and the mother of a vigorous family. My father's mother died with consumption, and my father's mother's father died with consumption; and during the past four years I have had under my observation a family of grown sons and daughters of marked scrofulous diathesis which can trace a line of ancestorship back to my father's mother's father, and in this line of descent are recorded twenty deaths from consumption that can be verified. The several habitations of these people have recently been traced out, and in a number of these old homesteads, during the past ten years, there has been typhoid fever, indicating, possibly, a previous state of imperfect sanitation at the time of a number of these deaths. In one of these families, as reliably traced out, all of the children, four in number, were separated early in life by the death of the mother, the father being an inebriate.

These children each were adopted in separate families. In none of these families can consumption be traced. These four children all died from consumption, aged respectively 12, 14, 16, and 17 years. I am satisfied that these children while growing were ill fed, were over-worked and ill cared for from authentic information, and that in each case there was a hereditary predisposition to consumption. The remaining families that have been identified, five in number, have run through the several generations with a hit and miss death-rate from consumption with the above stated results.

Possibly with this imperfect data at my command, and with my present inability to clearly disprove any knowledge of infection, physicians so inclined will satisfy themselves readily with the theory that the tubercle bacilli has been largely or entirely the cause of these premature deaths. However, I am not of that opinion. I

am satisfied that insanitation, improper diet, living in houses that did not begin to provide fresh air breathing capacity, has done this fatal work; that as the cause there has been this unknown, unrecognized careless indifference handed down this line of generation. Possibly some of the time it has been complicated with the drink habit. We will find ourselves to-day carelessly and without pronounced objection, submitting ourselves and our families to be transported about this country night after night, in the upper and lower berthed sectional sleeping-cars. This same careless, thoughtless principle can again be demonstrated in some of our booming smaller cities of the west which is particularly objectionable in the prairie State, where we can find cemeteries that are built in and surrounded by dwelling houses, and at the same time and without protest the burial of bodies is continued, and in the city the writer lives, it is now being practically considered, without regard to intelligent opposition, to establish permanent water-works on the well system within a few rods of the cemetery that was founded with the city and is now largely in use. The writer considers water as a food, and that it is as much entitled to consideration as such as alimentary food, and pure respiratory food, and if this article partakes in any degree of a hobby, all I have got to say is mount this hobby with Dr. Solis-Cohen's "nutrition," and if the steed is mounted with one-twentieth part of the zeal that was in the breast of Cortez, this enemy can be routed from every community.

I have never particularly concerned myself regarding the tubercle bacilli as the cause of consumption or tuberculosis, or what is being so much written regarding the infection of this disease. Nothing from this line of investigation has been brought to our notice but what every physician with thoughtful candor would naturally suspect. We are thankful for what has been discovered, and will carefully use to advantage what is found sensible reliable, to prevent consumption. To cure this disease, if we may beg this question, is simply to set ourselves at work in each of our several communities and see that every living person not only has a sufficiency of respiratory food pure and fresh, and also that none are suffering from the stomach or intestinal fermentation—the alcoholic or vinegar fermentation above mentioned. There is certainly much in this, and it is a simple matter to get intelligent people to understand that this is so. It is plainly clear to me that the physician is much, very much, to blame for the lack of understanding with average people regarding matters of diet, mixed diet, the excess of meat, animal food that in many cases must be used for years. Hardly without exception in numberless cases, where the stomach had nearly lost its functions, was weak

and rebellious, have I failed to restore it upon meat alone. The stomach is not only a receptacle for food, but it certainly is further than this, a meat digester, and if we will look over our teeth, and will study our jaw adjustment, we certainly must conclude that meat was intended to largely predominate as an article of food for man.

I think that all persons in the first stages of consumption can be relieved, permanently cured, if they will persistently yield to the will of an intelligent physician. These people all have abnormal appetites or none at all. They will insist upon food that is chemically unfit and that cannot naturally be assimilated by them. All persons seeking our advice and assistance that present any suspicion of wasting disease, should be carefully and intelligently examined. The blood and urine should be examined by the microscope, and the urine always in addition chemically analyzed. Every physician can do this work in his own office, and in his own manner, and after his own fashion, after providing himself with the necessary apparatus, the same as we do our reading or any ordinary mechanical work. We are field-workers, the most of us, but we can catch on to enough of the laboratory work of the book-maker to enable us to discriminate whether the blood of the patient be rotten or inclined in that direction, or whether the kidneys are straining such waste from the blood as is required by natural function. I have, in a simple manner, been doing this class of work myself for the past fifteen years, and during the past eight years can number persons by the double score that are now living in comparative good health. They call themselves well. They certainly do not complain. They are now surrounded with what we suppose to be fairly good sanitary conditions. They are living on a changed and improved diet, that was individually determined from experimentation, and they are supplied with large, wholesome living rooms, and at night-time have an abundance of fresh and pure air, mostly from the open window place. All of this, together with congenial business habits, make them happy, contented and industrious citizens.

The people in our towns and smaller cities who are subject to consumption, from personal observation, belong to the better, more industrious classes, and I know the shortsightedness as regards proper living has been an outgrowth of the terrible strain or ambition to get along in the world. This, without exception, has been my observation, during all these years, with those among whom I labor. This class of patients are hard to manage and control. It is almost impossible to do this; and here lies, I think, the greatest difficulty or obstacle toward a recovery. They are self-willed, independent, and are satisfied with nothing short of a servile doctor. They can not be told; it can not be read into them.

You can not force them to understand their condition. They will trifle along and throw aside all chance of recovery, partial or total, until visible signs of decay present themselves. They then possibly return to you; probably not. We all know how this illusion controls the conceit of our patient. The effect upon the nervous system is similar to the drink or morphine habit, or the constant use of any other poison; and from a like physiological condition of the blood I have many times been forced to this conclusion: That if, in the first stages of this disease, we could make every patient intelligently understand their condition, rather than persistently force themselves to a higher and more perfect grade of living were a cure possible, they would prefer to continue along on the premature downward path. The process of decay seems to hold its victims from the first. It soon becomes a second nature.

People generally live on better and more properly prepared food now than they did thirty years ago. It is a question, however, if as a class, the majority give themselves as good or better respiratory food as then. Facts are stubborn things, but it is the rule to find the most uncomfortable part of our dwellings, that part which is most ill-adapted to fresh air and sunlight, made into sleeping rooms. In my own city to-day there are many families among the better-to-do class that are living in the same manner as regards air-food, that I describe in this paper. I have, as far as I could, called their attention to this almost criminal matter, but they seem to be beyond my reach at present. You can tell our air-starved children as you look at them on the streets on their way to school. Follow them home and what you find regarding their sleeping room will verify your opinion. I have done this myself in many cases and have been gratefully listened to, and the suggested change has been promptly and thoroughly made. In other cases I have left the premises with a certain feeling that I had been kicked over the housetop.

During the past five years in many of the smaller towns throughout the West, there has been much improvement in the manner of building ordinary cottages, and I feel at liberty to say that in these communities the death-rate from consumption will decrease. This is my firm belief. Men raising families who begin poor, and by hard work and close living gain wealth, the matter of health among the children is overlooked and neglected. We all know this to be true, and that it is among this thrifty, thoughtless, but well meaning class, that we find our hardest work. It is among such people that we use the strongest part of our professional life, and in after years, as these people find themselves with a competence, they build for themselves more substantial and often elegant residences; but, alas, in too many instances, as we all know,

they find themselves alone. The poor, innocent children died by the wayside. Every case of wasting disease of a patient upwards of 20 years of age that has come to me during the past fifteen years, or since the time I knew enough to understand their several complainings, without exception, gave this common history: Long continued stomach and intestinal indigestion; years of living in what were supposed were houses fit for the highest type of civilization, that have since been found not to contain one room used for living purposes that could furnish the required amount, to say nothing about a liberal supply, of pure fresh air, and totally deficient in all additional sanitary requirements.

These are simple every-day matters that have got to be plainly met and thoroughly overcome before any radical change can be made in the death-rate from consumption. All the gain that has been made has been done in this direction. Forced nutrition, long-continued, pure respiratory food must be had in abundance. This line of work has to be done to save life in these cases, and, to be successful, must be entered upon, in most cases, years before the tubercle bacilli is on the premises. This is true as regards this disease called consumption, or tuberculosis. The tubercular cow may cut some figure in cases occurring among the milk-fed children in large cities. No such case has as yet come under my observation.

This paper is wholly based upon my own personal experience as an active worker during the past twenty-five years. I have personally accomplished enough in treating this disease to enable me to endorse the following language, as reported in *THE JOURNAL*, from Dr. John A. Cutter in the discussion of Dr. J. C. Wilson's paper read at the last meeting of this Association: "The treatment aims to stop the fermentation by the feeding of non-fermentative foods and proper medication, the patient is watched by studying the blood, urine and feces. So long as there are any masses of vinegar yeast in the blood, so long is the patient in danger of lung narcosis. When the blood has become healthy, then nature has a chance to attack the lung and heal it, and it has been our experience that by incessant, ceaseless watching, by most careful diet and medication, even cases with cavities have been cured and are alive to-day."

That much could be done, and more was to be expected, in the treatment of wasting diseases, particularly consumption, was vigorously taught me by my preceptor, Dr. Albert E. Sullard, of Franklin, N. Y., during 1864-1865. Diet, forced nutrition, with unlimited quantities of fresh air, with proper medication, was persistently followed by him. I certainly owe my life to his intelligence and indomitable will, and from statistics received of him, too late to be embodied in this paper, I find other persons now living can so testify.

LEFT INGUINAL COLOTOMY, WITH REMARKS ON OTHER OPERATIONS.

Read by Title in the Section of Surgery and Anatomy, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

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The object of this paper is to make some practical observations in one department of abdominal surgery.

As a preliminary to my remarks I have to present the record of a left inguinal colotomy performed at the surgical clinic of the Southern Medical College, at Atlanta, Ga.

It may be stated that the A. C. E. mixture was used as the anæsthetic, premixed by a hypodermic of morphia gr. $\frac{1}{4}$ and atropia gr. $\frac{1}{15}$; and that the large intestine was distended by a copious enema of tepid water previous to the operation.

The expectation in undertaking to make an artificial anus, was that by carrying off the fecal matter and thus relieving the rectal tumor of all irritation, there would result an atrophy of the structure, favorable to its removal by a subsequent operation. In any event, however, the increasing constriction of the recto-colic induration indicated such an obstruction to the evacuation of the contents of the bowel that it was only practicable when the fecal matter was kept in a semi-fluid state by the use of laxatives or enemata. The report of the case is as follows:

"A white man, 38 years old, came under the care of Dr. J. McF. Gaston, at the Providence Infirmary, during the month of November, 1889, for a growth in the rectum. After the use internally of Fowler's arsenical solution, with succus alterans for several weeks, and the local application within the rectum of iodoform with balsam of Peru daily without improvement of the induration, colotomy was considered proper to remove the increasing impediment to fecal evacuations.

"Accordingly, at the regular surgical clinic, on December 4, Dr. Gaston, with the assistance of Dr. W. P. Nicolson, proceeded to make an incision, running in the line from the anterior superior spinous process of the ilium to the spine of the pubic bone, into the peritoneal cavity. The surface of the sigmoid flexure of the colon presented in the wound, and its serous and muscular coats were attached by continuous iron-dyed silk suture to borders of the incision, bringing the serous parietal membrane in contact with that of the intestine, so as to have an oval space of $1\frac{1}{2}$ inch exposed. Iodoform was dusted over the entire surface with iodoform gauze placed in the opening, and the whole covered with antiseptic sublimate gauze, over which a layer of absorbent cotton was secured by a bandage around the body.

"The temperature and pulse showed slight increase during the following days, and the stitches

were removed on December 10, the adhesion being complete.

"On the 12th the patient was found with a pulse of 120 and temperature of 104° , having a profuse perspiration following rigors during the night. The wound was granulating, and in all respects was in good condition, but the tongue was much coated, and a discharge from the anus indicated disintegration of the rectal tumor. This aggravation of general condition was therefore attributed to septic contamination from the breaking down of the induration, having no connection whatever with the previous operation. The patient was put upon sulph. quin. grs. v, bic. soda grs. vj, calomel gr. j, in capsules every two hours until five doses were taken, which induced fecal evacuation.

"In the meantime the rectum was washed out with a solution of boracic acid, and the mixture of balsam of Peru left in the rectum. All local applications had been suspended after the operation, as there was no prospect of accomplishing any change in the tumor, but the above course was pursued daily from this time.

"On the afternoon of the same day the temperature had fallen to 100° and the pulse to 110 beats, and on the day following they became normal.

"A combination of Huxam's tinct. of cinchona and serpentaria, tinct. nux vomica and chlorate of potash was given every two or three hours, and on the 14th, his condition being favorable, preparations were made for completing the colotomy.

"With the assistance of Drs. Divine, Elkin, Nicolson and Murray, Dr. Gaston completed the operation in the following manner:

"Hypodermic of morphia and atropia was given; cocaine, 4 per cent. solution, was applied to granulating wound; a tenaculum was secured in the coats of the intestine near each angle of the incision to lift it up and put it on the stretch, a small puncture being made with a knife at one end of the proposed line of opening, a probe-pointed bistoury was pressed through this for the division of the walls of the colon to the extent of $1\frac{1}{4}$ inch. Retractors were used on each side to draw the cut edges back, and a plug, made by tying oil silk around cotton, so as to bulge in the form of a ball, was pressed into the bowel and retained by a compress of gauze laid over the expanded corners of the oil silk. A fold of cotton was firmly secured over all by a broad roller bandage around the body. There was but little sensation of pain by the patient, and his general condition was good subsequently, under the continued use of $\frac{1}{2}$ gr. of gum opium at night. He has had the dressings renewed daily with copious fecal evacuations from the opening, and but little discharge from the anus. The boracic solution and iodoform, with Peruvian balsam, continue to be applied twice a day in the rectum

for the correction of the disintegrating process in the tumor.

"On the 9th of January, 1890, Huxam's tincture mixture was discontinued, and a combination of mur. tinct. iron and tinct. nux vomica ordered four times a day to counteract a tendency to night sweats. In all other respects the case is progressing satisfactorily, except that a swelling has occurred to the left of the anus, connected with the carcinomatous degeneration."

The further observation of the patient while in the infirmary demonstrated the entire success of the operation in establishing a direct outlet from the colon. By securing a plug over the opening with an elastic strap the evacuations were controlled so as to have the motions of the bowels at fixed periods. There was very little, if any fecal matter discharged by the anus, though the disintegration of the carcinomatous tumor led to some escape from the rectum daily. The mixture of iodoform with balsam of Peru was thrown into the rectum after washing out with a solution of boracic acid, for a time; but finding that the boracic solution passed up and out at the artificial anus, so as to run the risk of contamination by dislodging the debris, this was ultimately abandoned. The swelling referred to in the clinical report lessened under poulticing, with the occurrence of suppuration, which escaped through the anus. An increase of appetite, with sleep at night, and a hopefulness on the part of the patient led to his discharge from the infirmary. His brother has reported his condition from time to time, stating that the gluteal abscess broke externally and gave exit to some fecal matter with a purulent discharge from the opening near the anus.

The last communication, dated May 15, 1890, states that the patient cannot last but a few days longer, and it is probable that ere this death has occurred.

At different times I have reported two other cases of carcinomatous tumors of the rectum which terminated fatally without resorting to any operative measure; and the question which is presented for solution in similar cases bears upon the propriety of early extirpation with or without an artificial anus. I am convinced that left inguinal colotomy by the process adopted in this instance of effecting a primary union of the peritoneal coat of the bowel and the lining of the abdominal wall, is the most effective mode of producing an artificial anus. It is very simple and easily done, without any possibility of the escape of the contents of the colon into the peritoneal cavity, which is liable to occur in the opening and attachment of the margins of the gut and the parietes at a single operation. This primary union of the parietal and intestinal surfaces by adhesive inflammation is also well suited to the relief of stenosis of the descending colon, and may be resorted to

in the transverse colon by attachment to the parietes in the epigastrium with facility.

In consultation with a colleague two years ago, I saw a case in which constriction of the descending colon could barely admit an intestinal tube, and only when the fecal matter was in a semi-fluid state could evacuation be effected. But from time to time relief was thus afforded, and for several weeks it was hoped that dilatation might be accomplished. The case, however, terminated fatally, and upon the post-mortem examination it was verified that the indurated band was circumscribed in such form that an outlet above the constriction would have been entirely practicable by the attachment of the intestinal and parietal walls. Had an artificial anus been effected, it is a fair inference that complete occlusion would have ensued at the constriction, and the consequent atrophy of the tissues would have proved favorable to the excision of the diseased structure.

We may rely upon the diminution of the activity of the vascular supply in tissues which are left at rest, and when the function of the intestinal canal is entirely suspended by the discharge of the contents at a certain part of the tract above a stenosis, all below must undergo a gradual loss of vitality which renders operative measures less liable to troublesome consequences.

The principle involved in cutting off the passage of the contents of the intestines from certain portions is demonstrated not only by establishing an outlet externally, but also by connecting one portion of the intestine with another in such a way as to bring the segment above a constriction into communication with that below it. Thus a stenosis or contraction of the lumen from any cause, is excluded from the intestinal tract, and the new channel serves to bring the upper and lower portion of the canal into direct relations.

While I lay no special claim to priority in the presentation of the merits of intestinal anastomosis to the profession, yet it is not out of place to reiterate the statement made in my paper on the "Surgical Relations of the Ileo-cæcal Region," at the meeting of the American Medical Association in 1886. It is upon record in *THE JOURNAL*, that the following paragraphs appeared as parts of my paper:

"Stenosis from fibrous depositions or malignant growth in the vicinity of the ileo-cæcal connection would seem to warrant the removal of the entire structure involved.

"The practicability of relief in this class of cases by effecting a direct communication between the ileum and colon so as to cut off the passage through the ileo-cæcal valve, is worthy of consideration.

"The diseased structures become atrophied or may be excised subsequently. If it should be desirable to effect an immediate passage from the ileum into the colon, with a view to accomplish

the resection of the diseased structures on the same occasion, there could be no difficulty in proceeding upon the same principle as indicated by my punch process for the communication of the gall bladder and the duodenum.

"We may imitate nature in her effort to obviate the difficulty of constriction in the natural course of adhesions and a fistulous communication directly, by adopting the measure for uniting the coats of the intestinal canal above and below the point of stricture, and thus establishing a direct route for the passage of the contents of the alimentary canal by cutting off the obstructed coil of intestine. So soon as the direct artificial communication between the ileum and colon is fully established through the opening made by separation of the tissues included in a circular or oval row of stitches, the cessation of the passage through the ileo-cæcal valve must lead to a gradual atrophy of the structures adjoining on either side, and in case of simple stenosis, obliteration of the canal will ensue, while if carcinoma exists, there will be such a diminution of vitality in the healthy attachments as to lessen materially their susceptibility to shock or inflammatory action, so as to admit of the requisite operation for removal by resection and suturing for closure of the divided ends.

"In case of simple stenosis or malignant growths involving the ileo-cæcal connections, ileo-colostomy is indicated."

The process of effecting the anastomosis of one part of the intestinal canal with another is illustrated by cuts so that it cannot fail to be understood, and reprints of the paper can be furnished to all who desire information on the subject.

In regard to the mode of effecting the intestinal union considerable diversity exists. While the operations of Masonneuve, Langier, Hacker and Senn differ materially from mine, it does not matter much by what process the apposition is maintained, so that an opening is established, whereby the passage of fæces may occur from the portion of the intestine above the disease to another below it.

The grand result aimed at is the continuity of the intestinal canal in cases of obstruction from organic stricture; and the attachment of a portion of the small intestine above such a constriction, to a portion of the same or to the large intestine below, with a provision for free transit of the contents, must obviate the necessity of an external outlet by an artificial anus. Notwithstanding the high estimate placed upon Greig Smith as an authority, it must appear to every considerate observer, that he advises a resort to artificial anus in cases of obstruction which might be effectually relieved by the process of intestinal anastomosis which I have urged.

The record of another operation may be appropriately introduced in illustration of an important phase of abdominal surgery. This was gastro-

my for occlusion of the œsophagus just above the diaphragm.

As there is no history of the case given in the clinical report, it may be stated that an injury was inflicted in the early youth of the patient, from swallowing a briar along with a berry, which stuck in his throat. From time to time he experienced some difficulty in swallowing, and occasionally the impediment was such as to limit him to fluid diet, such as milk with raw eggs. On several occasions he had experienced so much inconvenience as to require medical advice; and being called in consultation about a month prior to the operation, an attempt was made with bougie and a stomach tube to pass the constriction. The patient had so little capacity or toleration for any examination of the gullet that nothing was accomplished in the way of dilatation, and I then recommended him to submit to a radical operation. He had been able to swallow beef soup and other fluid nourishment up to this time and was fairly nourished, so that he declined my proposition. The following details are given in the report:

"The patient was a white man 35 years old, under the care of Dr. A. C. Moreland, who requested Dr. Gaston to undertake the operation of gastrostomy, after attempting rectal alimentation for two weeks; and the case was accordingly turned over to him on July 8 for preparatory treatment. This consisted in the addition of $\frac{1}{2}$ oz. of tincture of Peruvian bark to the nutritive enemata every four hours, until July 13, when the operation was performed in the following manner:

"An incision, 4 inches long, extending from the median line obliquely across, 1 inch below the cartilages of the ribs on the left side, was carried through all the structures into the peritoneal cavity. Four fingers of the left hand were introduced, and after considerable difficulty, owing to the contracted state of the coats of the stomach, the organ was brought into the external opening. Two strong silk ligatures were passed at a distance of $1\frac{1}{2}$ inch through the walls of the anterior portion of the large curvature of the stomach, and secured by an assistant, while an incision of 1 inch was made in the intervening tissue, entering the cavity. The forefinger of the operator's left hand was then passed up to the cardiac orifice, and with this as a guide, an olive pointed elastic probang was introduced and carried up through the constricted part, about 2 inches above the cardiac opening, requiring only moderate force in the passage of a bougie $\frac{1}{2}$ inch in diameter. The edges of the parietal peritoneum were closed with continuous catgut suture to the point where the incised walls of the stomach were drawn into the external wound, and then secured around this by stitches, including only the serous and muscular layers, at a distance of $\frac{1}{2}$ inch from the edges of the stomach. A deep interrupted silk suture was

used to close the parietal wound up to the included margins of the gastric walls; and these were attached to the edges of the parietal incision, by first passing interrupted stitches of silk and catgut alternately through both, which were left for the time without being united. A silver canula of $\frac{1}{2}$ inch diameter, $\frac{3}{4}$ of an inch long, having flanges at both ends, was now introduced into the opening, and the stitches tightened and tied around the entire margin of the gastric aperture so as to fix the canula in its position. An India rubber stopper closed the tube, so as to be removed at will, for the introduction of nourishment. The tegumentary union was covered with iodoform, with antiseptic cotton, and a sheet of protective oil cloth outside, the whole being secured by turns of a broad roller bandage around the body.

"After recovering from the effects of the anæsthetic (A. C. E. mixture) the patient took a sip of water, declaring that it went into the stomach, and afterwards used milk and lime water, or milk punch repeatedly in small quantities. But this was followed on the second and third days by regurgitation. On the evening of the 16th milk was thrown into the stomach through the canula, but returned immediately by the contraction of the stomach.

"From the outset, after the operation, enemata of beef soup, corn meal gruel and tincture of Peruvian bark were kept up every four hours, with a view to relieve the stomach; and after this unfavorable experiment with feeding by the mouth or the canula, the necessity of continuing this mode of alimentation was very apparent.

"The temperature and pulse beat had not gone much beyond the normal prior to the morning of the 17th, when all had changed for the worse, with an accelerated pulse and temperature of $103\frac{1}{4}^{\circ}$ F. It had been necessary to draw off the urine with the catheter frequently, while at times it was passed voluntarily, and the quantity on this occasion exceeded $\frac{1}{2}$ pint, showing that the secretion or excretion was progressing regularly.

"There was no distension of the abdomen indicating local peritonitis, and the patient swallowed peptonized milk with lime water without greater difficulty than on previous occasions. But the mind was somewhat impaired, and the vital powers evidently giving way, so that it gave no surprise to learn that he died at 2 P.M. of that day, being the fourth after the gastrostomy was done.

"An autopsy, four hours after death, showed the external wound united, with the exception of a single point in the peritoneum, near the border of the gastric attachment, while the union between the gastric and parietal walls was complete. The stricture in the œsophagus embraced all its coats for an extent of 2 inches, and was much thickened and indurated, with a tendency to disintegration of structure immediately below this hard mass.

"The indications of scirrhus degeneration are such that there was no prospect of final relief, even should the patient have survived the measure of temporary alimentation. The specimen will be submitted to examination by the microscope, for decision as to the character of the disease."

The cause of death in this case was clearly inanition. He persisted in refusing to submit to the operation, in the hope that the occlusion might yield, until his vital force was too much exhausted for recuperation. A lesson is conveyed by these fatal results of delay in such cases, and the surgeon should urge patients suffering with difficulty of deglutition to avail themselves of gastrostomy while still able to take nourishment, as they are in a much more favorable condition for recovery. I have had two children brought to me for examination in the past two years who suffered from swallowing caustic fluid, which in the cicatrization left stricture of the œsophagus below the middle. They were fairly well nourished by fluids, and an operation for attaching the stomach to the parietes of the epigastrium would doubtless have proved successful at that time. But the parents declined this, and also refused to subject the little patients to the inconvenience of dilatation by bougies. The result was of course the death of both in a comparatively short time. One of the practical observations which presses itself upon our attention in these cases is the inefficiency of rectal alimentation for sustaining the powers of the organism for any considerable period, leading finally to inanition.

THE VALUE OF ATROPIA IN ENURESIS.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1880.

BY R. B. JAMES, M.D.,
OF NEW YORK CITY.

In December, 1888, Dr. Simon Baruch read before the New York Academy of Medicine a paper (*Archives of Pediatrics*, April, 1889), in which he discussed "Nocturnal Enuresis in Children, and its Treatment," bringing to the notice of the medical profession the great value of the alkaloid atropin in this affection, as evidenced by results obtained in quite a number of cases in which he had used it. But he added that since his cases had not been very long under observation, he could not predict the ultimate result to be obtained.

Dr. Perry Watson, of Jersey City, read before the American Medical Association, at its last meeting, a paper in which he reported in detail thirty unselected cases of enuresis all cured or greatly benefited by this drug. Prompted or encouraged by such glowing accounts of the virtue of this drug, many of the profession resorted to

its use with great confidence and expectations; but a long and faithful trial of it has scored another failure in our search for specifics; for some of us, at least, have found that the number of cases of enuresis cured by atropia, during its administration, is truly great, but the number remaining cured when the drug is stopped is small indeed.

The writer, while resident physician in an orphan asylum in New York, had under his charge many cases of enuresis that had resisted belladonna, strychnine, and the other lauded remedies. After hearing Dr. Baruch's papers he determined to give atropia a trial. Fifteen of the worst cases among the smaller children, from $3\frac{1}{2}$ to 9 years old, in which no cause for the trouble could be made out, were selected. Some of them wet themselves alternate nights only, others every night, while a few suffered from diurnal as well as nocturnal enuresis. In this institution all the smaller children are put to bed at 6 P. M. and made to rise three hours later, at 9 P. M., and urged to urinate.

The following plan of treatment was instituted: I made a solution of atropia sulphate, of which one teaspoonful represented $\frac{1}{16}$ gr. of the drug. Of this solution, for the first night, each child had one teaspoonful at 6 and another at 9 P. M., and this to be increased by one teaspoonful every night till a controlling dose was reached for each case. None of them were benefited by less than $\frac{1}{16}$ gr. at night, *i. e.*, $\frac{1}{16}$ gr. at 6, and $\frac{1}{16}$ gr. at 9 P. M., while others require as much as $\frac{1}{8}$ gr. (divided as above). One case was given as much as $\frac{1}{4}$ gr. at night without showing symptoms of poisoning.

It may be stated that nothing short of the quantity that produced full physiological effects was of any avail. This point was insisted upon by Dr. Baruch in the paper referred to. After the controlling dose was ascertained for each case it was repeated every night for about one month, when the drug was withheld altogether. It was found that many of the cases were completely relieved, while others were not benefited. The latter were immediately put on their controlling dose and an attempt made to diminish it, "to taper off," so to speak, but without much success in this, though in no case was it found necessary to increase the original controlling dose, except in one case (12), where it lost its effect.

Now, of the cases "completely relieved" the enuresis returned in all, with one exception, in periods ranging from one to six weeks. The case (8) that was cured was a healthy boy but slightly affected. These cases were put on their controlling doses as they relapsed, and an attempt was made to "taper off" with them also, and in some cases a considerable reduction of dose was effected. These cases were kept under close observation for eight months, during which time

many of them would go without the drug or on reduced doses from one to four weeks without wetting themselves; but sooner or later the relapse would occur, and at the end of the eight months they were but little better than when we started treatment.

It can be seen how any one who has not kept a long watch over his patients could readily arrive at the conclusion that permanent relief had been obtained in most of these cases, especially if he depended on the matron or person in charge of his cases for his information; for after such complete relief afforded by the treatment she is slow to acknowledge a relapse, and it is only after the closest scrutiny and questioning that you can arrive at the actual state of affairs. Such, at least, has been my experience, for not a few of these cases reported here were marked cured in my notes, after questioning the matron carefully, but on visiting the wards myself early in the morning I found that such was not the case. No doubt this element in human nature is largely responsible for the erroneous conclusions arrived at and published by those who rely too implicitly on the information gained from attendants.

Below is a short report of the fifteen cases, as to age, sex, controlling dose, effect and result of treatment. The doses mentioned were always given half at 6 and half at 9 P. M. Case 1 may be taken as the typical case; those doing worse or better are the exceptions.

Case 1.—Mary G., 9 years, March 2, 1889. Controlling dose, $\frac{1}{16}$ gr. ($\frac{1}{16}$ gr. at 6 and $\frac{1}{16}$ gr. at 9 P. M.). May 18, has not wet bed for one month, stopped atropia. July 1 relapsed; atropia resumed. Nothing less than $\frac{1}{16}$ gr. will control her for any length of time. October, 1889, enuresis returned when drug was stopped.

Case 2.—Oscar L., 6 years and 6 months. March 2, Controlling dose, $\frac{1}{16}$ gr. ($\frac{1}{16}$ gr. at 6 and $\frac{1}{16}$ gr. at 9 P. M.). Results similar to case 1, save as to date. October, 1889, enuresis returned when drug stopped.

Case 3.—Eva R., 5 years and 6 months. Controlling dose, $\frac{1}{16}$ gr. April 22, has not wet bed for one month. Gradually diminished dose without return of enuresis. October, 1889, does not wet bed every night; a great improvement.

Case 4.—Hannah C., age 8 years. March 2, Controlling dose, $\frac{1}{16}$ gr., which produced symptoms of poisoning. Did not lessen dose. Results similar to case 1, except she had longer relief when drug was stopped. October, 1889, enuresis returned when drug was stopped.

Case 5.—Felix H., 6 years. Controlling dose, $\frac{1}{16}$ gr. May 1, relief complete, stopped drug. July 1, wets bed occasionally. Drug resumed October, 1889; cured completely.

Case 6.—Pauline P., age $6\frac{1}{2}$ years. March 2, Controlling dose, $\frac{1}{16}$ gr. April 22, has not wet bed for one month. Atropia stopped; immediate

relapse. Atropia resumed; attempt to reduce dose; no success. October, 1889, not cured.

Case 7.—Henry W., age 7 years. March 2, Controlling dose, $\frac{1}{16}$ gr. May 1, relief. Gradually diminished dose. July 1, relapsed; drug resumed. October, 1889, not cured.

Case 8.—Isadore S., age 7 years and 6 months. March 2, Controlling dose $\frac{1}{16}$ gr. April 22, relief; stopped drug. October, 1889, completely cured.

Case 9.—Maurice S., $6\frac{1}{2}$ years. Controlling dose, $\frac{1}{16}$ gr. Result similar to case 1. October, 1889, not cured.

Case 10.—Abe S., $5\frac{1}{2}$ years. Controlling dose $\frac{1}{16}$ gr. Result similar to case 1. October, 1889, not cured.

Case 11.—Sarah R., 7 years. Controlling dose, $\frac{1}{16}$ gr. Result similar to case 1. October, 1889, not cured.

Case 12.—Peter S., 7 years. March 2. Controlling dose, $\frac{1}{16}$ gr. May 18, relief; atropia stopped. June 20, enuresis returned; put on $\frac{1}{16}$ gr.; does not control; increased to $\frac{1}{10}$ gr. without effect, so drug was stopped.

Case 13.—Lily F., $3\frac{1}{2}$ years. March 2. Controlling dose, $\frac{1}{16}$ gr. May 1, relief; stopped drug; partial relapse. October, 1889, much benefited.

Case 14.—Hattie R., 6 years. March 2. Controlling dose $\frac{1}{16}$ gr. April 22, relief, but relapsed when drug was stopped. Attempt to reduce dose, with little success. October, 1889, not benefited.

Case 15.—Rachael E., 7 years. March 2. Controlling dose, $\frac{1}{16}$ gr. April 22, relief; drug stopped; relapsed; drug resumed. October, 1889, not cured.

In only one case did any symptoms of poisoning occur, and in this not sufficient to warrant a suspension of the remedy, or even a diminution of the dose. Under the long continued use of the drug, though in such large doses, there were observed no bad effects from it; but, on the contrary, the children, being relieved from the stigma of being a "bed wetter," were brighter and less constrained than when the drug was left off, with the consequent return of the enuresis. It may be well here to state that some of these children, though under the age of 5 years, were so ashamed of their affliction that on finding they had wet their beds at night, would exchange their wet sheets for dry ones from the cots of their slumbering neighbors, thus shifting the coming lecture to innocent shoulders; so great was the effect of the so-called "moral treatment."

As may be seen, every case was absolutely controlled so long as the treatment was kept up, except in one case, where it lost its effects after some months of complete relief, and this for some unknown cause which was never overcome, though the drug was pushed to a dangerous point.

It is a matter of no little regret that after such a promising beginning, the final result shows such a little gained.

On October 1, after eight months of treatment of the fifteen cases, two cases were cured, and these mild cases; two others benefited, in that they did not wet their bed so often; one it ceased to benefit, while ten showed little or no improvement when the drug was stopped.

I stated that in some of these cases the dose could be diminished after the controlling dose had been continued for some time. Now, any long use of this diminished dose would lead to a relapse, and it is more than probable that the length of time before this relapse occurred was but little if any greater than it would have been had the drug been withheld entirely; and I am compelled to acknowledge that anything short of the full controlling dose is of little value, though since the effect of the full dose lasts so long after the drug is stopped, one would suppose that smaller doses would serve to keep up this effect. Such was the principle upon which I worked, but without any great success.

In these cases there could be made out no cause for the trouble. They were all in good health otherwise; their food and hygienic surroundings were all that could be desired. They were allowed no fluid at night, but under the atropia treatment this point was not insisted upon, as it seemed to make no difference whether they had a moderate amount of fluid at supper or not. In short, these cases represented what we often find in private practice. Children in seemingly perfect health and under good moral training yet persist in wetting themselves and their beds without any assignable cause.

Now, since the long continued use of atropia has no ill effect nor tolerance established that requires an increased dose, and since undoubtedly the vast majority of these cases can be controlled by the drug, we can claim for these children and their mothers a valuable friend in atropia. When a child is too large to wear diapers, or they cease to be effectual, we can with confidence offer a substitute in the shape of a full dose of atropia, to be repeated every night until the child has outgrown his infirmity, and this point can be tested by having the drug withheld from time to time.

It will be well to add, in conclusion, that many other cases of enuresis were put on atropia, and it controlled them in every case under 12 years of age; and at this writing, April, 1890, thirteen months after the treatment was begun, these children are about as they were last October, receiving their nightly doses of atropia, and improved only as we have a right to expect with the advance in years. As to those over 12 years old who received this treatment, which was quite a number, can only say they did badly—cannot

recall a case that was benefited in the least; and I fear that children over this age suffering from enuresis are subjects of such inherent defects that other drugs or means than atropia must be sought ere they are relieved.

160 East 92d street, New York City.

FACTS VERSUS FIGURES. YELLOW FEVER INOCULATION.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 21, 1890.

BY GEO. M. STERNBERG,

MAJOR AND SURGEON, U. S. A.

My report on Dr. Freire's yellow fever inoculations having been recently published in the annual volume of the Marine-Hospital Service, I should not consider it necessary to say anything more about Dr. Freire's inoculations but for the fact that a majority of the readers of *THE JOURNAL* are not likely to see this report, and I dare say many will be influenced by the statistics of Dr. Freire and the enthusiastic support Dr. Gaston¹ and his son-in-law Dr. Lane,² of San Paulo, Brazil, to accept figures as evidence of the prophylactic value of Dr. Freire's inoculations.

It is hardly necessary to say that figures are not facts, although when used for statistical purposes they are supposed to represent facts. We accept Dr. Freire's figures as representing the fact that a very large number of persons in Brazil have been inoculated by himself and some of his medical friends with his cultures, but having very positive evidence that these cultures do not contain the specific germ of yellow fever, we consider the statement that his inoculations are made with the "attenuated microbe" of yellow fever to be a fancy and not a fact.

And in judging of the value of his recently published statistics we take the liberty of looking back of the figures at certain facts which were developed by our personal investigation in the city of Rio; but before referring to these we desire to call attention to a fact stated by Dr. Freire himself, which for us is of prime importance. In Dr. Gaston's translation we read: "There were inoculated in Rio de Janeiro 1,183 persons under the conditions mentioned, and of these the deaths should have been at least 591. Behold! Only 18 died.

On page 16 of his latest publication³ Dr. Freire gives the names of twenty-one persons among the vaccinated during the year who died of yellow fever, viz.: "Eleven strangers and ten Brazilians."

Let us, however, take the figures as given in the paper from which Dr. Gaston has translated. The proportion of deaths is $\frac{1,183}{18} = 65.72$. That is one person out of 66 of the vaccinated died of yellow fever.

Now let us see what was the ratio of mortality among the unvaccinated portion of the population. According to Dr. Freire the total number of deaths during the epidemic was 2,386, including those which occurred in the Jurajuba Hospital (800). The total population of Rio is estimated at 400,000; let us divide this by two on the supposition that one-half of the population is protected by a previous attack or by long residence in the city. This gives us $\frac{200,000}{2,386} = 83.82$. That is, the mortality among the vaccinated was greater than among the non-vaccinated, estimating the susceptible population at one-half of the entire population of the city. And yet Dr. Freire estimates that 573 lives were spared in the city of Rio by his inoculations. This result is reached as follows:

"With a view to illustrate the efficacy of the inoculations let us record the ratio adopted by Dr. Jemle, in Senegal. He verified that among the strangers residing there from one to three years, 75 out of 100 are attacked with yellow fever and 66.6 out of 100 died. Let us make application of these proportions to our vaccinated strangers and natives, that resided in the infected district from a few days to three years."

It is by this estimate that a saving of 573 lives is made out. I am surprised that Dr. Freire has the temerity to again resort to this misuse of the statistical method, after the criticism which his his statistics for the year 1884 underwent in the Imperial Academy of Medicine of Brazil. I give below a translation of an address made by a prominent physician of Rio de Janeiro, Dr. Nuno de Andrade, inspector-general of hygiene of the ports of Brazil. This was made at a meeting held on July 14, 1885, and is translated from the bulletin of the Academy.

But passing over all these incidents, the speaker proceeded to explain to the Academy Dr. Freire's singular method of arranging statistics to prove the efficacy of his preventive inoculations. The process of manufacturing statistics discovered by Dr. Freire exceeded anything the speaker had ever deemed possible, for his statistics for Rio Janeiro in 1884 were prepared with data obtained in Senegal in 1881. What Dr. Freire proposed to ascertain was whether in 1884 the number of deaths in Rio de Janeiro, in proportion to that of the persons liable to take the yellow fever was greater or not than that of the deaths among vaccinated persons in proportion to the whole number vaccinated. With this object in view, he said: "In Senegal, in 1881, of four foreigners with less than three years' residence in this country, three had the yellow fever, and of these two died; therefore the proportion of cases of yellow fever was 75 per cent, and the mortality among the patients was 66.6 per cent. In Rio the mortality in 1884 was 35 per cent; ergo, reasoned Dr. Freire, 35 (of Rio):66.6 (of Senegal) :: x (of Rio):75 (of Senegal). In this cal-

¹ The Journal, March 22, 1890. Facts versus Fiction Touching Yellow Fever Inoculation.

² Letter from Brazil by "Occasional Correspondent." The Journal, July 27, 1889.

³ Statistique des vaccinations au moyen des cultures du microbe atténué de la fièvre jaune, Rio de Janeiro, 1890.

culaton, whose wonderful ingenuity had greatly impressed the speaker, $x = 39.4$. "Thus" concluded Dr. Freire "in Rio de Janeiro in 1884, of every 100 persons liable to have the yellow fever, 39.4 were actually taken with it; and as the mortality was 35 per cent, represented by 654 deaths, the whole number of patients was 1873." Wishing to learn next how many persons there were in Rio, in 1884, liable to have the yellow fever, Dr. Freire established the following proportion: $39.4 : 100 :: 1873 : x$. Therefore $39.4 x = 187,300$, and $x = 4,737$. Hence Dr. Freire concludes that in 1884 there were in Rio de Janeiro only 4,737 persons liable to have the yellow fever, and that of these 654, or 13.7 per cent died, while of the 418 vaccinated there died only 7, or 1.6 per cent.

From this he infers that the result of his preventive vaccinations is really wonderful. (Page 181 of "Appendix to the Doctrine Microbienne.")

The speaker, however, preferred omitting the statistics of Senegal and making use only of those of Rio. Deducting, then, from Dr. Freire's list of vaccinated persons those who had more than three year's residence, and those residing in Vassouras and Serraria, the number of those liable to have the fever, according to the theory advanced in Dr. Freire's calculation, is reduced to three hundred and forty. Among these there were ten deaths, i. e. a mortality of 2.9 per cent.

The number of foreigners who arrived in Rio de Janeiro in 1880, 1881, and 1882 was 66,628, all liable, according to the aforesaid theory, to have the fever.

This number, which is taken as a basis for the calculation, said the speaker, is not exaggerated, for if it be true that many of these persons did not remain in the city, it is also true that the calculation does not include the tens of thousands of sailors on board the vessels in port, nor the persons newly arrived from the country, nor the children residing here, who are unfortunately paying a heavy tribute to the epidemic.

Very well, the 654 deaths from yellow fever among the 66,210 persons liable to take the disease (66,628—418 vaccinated by Dr. Freire) represent a mortality of 1.01 per cent, which is much smaller than the mortality among the vaccinated.

At this point the speaker said that owing to his fatigue and the lateness of the hour he would, for the time, terminate his address.

But what shall we say of the very favorable statistics from Campinas, the former residence of Dr. Gaston? Simply, I think, that the favorable results are due to the fact that *the survivors of the epidemic were inoculated*. To make a fair test the inoculations should have been made in advance of the epidemic, or at the very outset.

In that case a comparison of results among persons of equal susceptibility, and exposed in the same way would have been of scientific value. But the survivors of an epidemic have already demonstrated their slight susceptibility to the disease, and not having contracted it during the height of the epidemic what reason have we for ascribing their immunity during its decline, or after its termination, to the inoculation practiced by Dr. Freire or by his disciple Dr. Angelo Simoes, of Campinas. Some of those vaccinated did contract the disease as we learn from Dr. Simoes letter of May 7. He says: "I think then that the portion of the population not attacked by the disease have been vaccinated; and the new cases, *which are few*, that are appearing in individuals who do not wish to avail them-

selves of this prophylactic, *without counting one or another vaccinated, who has had the disease mildly*." (Italics by present writer).

We learn from Dr. Freire's report of a later date than this letter from Dr. Simoes, that three of those vaccinated at Campinas died.

Since Dr. Gaston has quoted from Brazilian physicians who have faith in Dr. Freire's inoculations, I may be permitted to quote from some prominent physicians of the capital who have pointed out the insufficiency of the evidence.

The following is from a letter by the president of the Central Board of Health, of the Empire, which was published in one of the daily newspapers of Rio, in April, 1886:

I am obliged to correct the statements of Dr. Domingos José Freire in his article of the 7th instant, and in so doing I shall simply narrate facts, as I consider it unnecessary to enter into a formal discussion of the question.

For the facts referred to see my report, p. 184. The letter concludes as follows:

It is my sincere desire that Dr. Freire may continue to study the preservative action of his microbial cultures in relation to the yellow fever, but that he may do so calmly and without bias, like a scientific man, as did Edward Jenner in regard to vaccine matter as a preservative from small pox.

Let him avail himself of the labors of his professional brethren, and let him select assistants qualified to elevate his theories in the opinion of the public and profession instead of recruiting them among speculators and frequenters of tenement houses, who obtain greater numerical results by making victims and not disciples.

Let him again attend the meetings of the Academy of Medicine, where he has always been listened to with interest, and let him there recount his triumphs without showing offense if some colleague happens to differ from him. He should remember that science has always had its martyrs, but that these in compensation have been glorified by history.

Let him not be deceived by the praise bestowed on him in the press by persons who for purposes of their own make use of his name.

There have already been recorded many cases of deaths among persons inoculated with the microbial liquid, including the members of a respectable family vaccinated a year ago in Catumbi. One member of this family died of a pernicious lymphatitis a few days after vaccination, and another of yellow fever a little over two months ago. Every one else in the house had the yellow fever, although vaccinated. The person who fared best, having only a mild attack, was one who was absent when Dr. Freire invaded the house and performed the vaccinations without the previous consent of the head of the family.

The mortality among those vaccinated by Dr. Freire in 1884 was even greater in proportion to the number vaccinated than during the past year. He, himself, admitted seven deaths, and also confesses that "during the epidemic season a great number of the vaccinated were attacked with the malady."

But the list of deaths has been added to considerably by some of his medical confrères in Rio de Janeiro. The following is from Dr. Araujo Goes, a member of the Central Board of Health, and a gentleman whose statements are worthy of the fullest confidence:

My letter to the Imperial Academy of Medicine having been published it now behooves me to publish the statistics relating to the vaccinations on Morro da Viuva.

One fact seems to me to be definitely demonstrated, that is the worthlessness of Dr. Freire's vaccination, as is well known to the medical profession of this city.

A year ago I wrote the following:

"The want of skill which he displayed in his first experiments, the false conclusions which he has drawn therefrom, and the thoughtless precipitation with which he has hastened to make known incomplete results without accompanying them with a single qualifying remark, vitiate all the methods to which he may hereafter resort to corroborate his statements." (*Jornal do Commercio*, April 20, 1883).

The mortality among the persons vaccinated on Morro da Viuva furnishes one more proof that I was right in saying this, as I now proceed to demonstrate.

There were vaccinated in this district sixty persons, sixteen removed shortly after the commencement of the epidemic and forty-four remained exposed to its influence; of these twenty-two had the yellow fever, nine of whom died."

I am obliged to judge of Dr. Freire's statistics for the past year in the light of the facts developed by my personal investigations in Rio with reference to his inoculations practiced prior to my visit to that city in 1887; and those members of the profession who are disposed to accord some value to his published figures, are respectfully referred to that portion of my report in which I have analyzed his statistics for 1884, 1885, and 1886." My conclusion is stated in the report referred to as follows: "Our analysis leads us to the conclusion that there is no satisfactory evidence that Dr. Freire's inoculations have any prophylactic value."

MEDICAL PROGRESS.

TREATMENT OF SCIATICA AND OTHER NEURALGIAS.—MORDHORST (*Therapeutische Monatshefte*, June, 1890), states that the diagnosis of sciatica is not always easy, and that inflammatory thickening of the rectus femoris and rostrus externus may be mistaken for this condition. It may also be confounded with rheumatic affections of the trochanter major and the muscles covering the hip-joint, especially the tensor vagina femoris, in the tendon of which may be found small masses varying in size from a lentil to a bean. These may be mistaken for true punctata dolorosa, as they are painful upon pressure. In many of these cases the writer has found an excess of free uric acid in the urine, and so concludes that these masses are urates deposited in the tissues.

With these few remarks on diagnosis the author takes up his special methods of treating sciatica, which he has employed for the past four years, and for which he claims the best results. In cases of neuritis—most of these cases belong to that

class—it is well to begin with a hot bath of from fifteen minutes to one hour's duration, followed by rest in bed of at least one hour, after which electric massage is to be used after the author's method. This consists of the application of the cathodal electrode having a surface area of at least 100 square cm. to the sciatic notch, while a revolving cylinder connected with the anode is passed down the limb along the course of the nerves. Deep pressure is made when the electrode is drawn downward, but it should only touch the skin lightly when returned, to prevent a break in the current. The author says that stronger currents (from 5 to 10 milliampères) can be used in this way, with a corresponding rapid absorption of inflammatory exudate.

Of thirty-six cases of sciatica treated in this way thirty recovered and six were improved. One case was cured in eight days, but the average length of treatment was from three to six weeks. Of thirteen other neuralgias, ten were cured and three improved.

ABSCESS OF THE BRAIN—RECOVERY.—DR. HANS SCHMID presented to the German Surgical Congress (*Internat. Klin. Rundschau*) a patient, who five months before had received a blow on the head with a beer-glass. At first he was comatose, but no further symptoms developed, and the wound healed in the course of a month with the exception of a small fistula. Six weeks after the injury the patient had an epileptic fit. These became more frequent, he lost flesh, and was sent to the asylum. There he sat anxiously in a corner, dreading every noise and movement, lest they precipitate an attack. The seizures were distinctly epileptic in character, and were preceded by an aura and cramps that began in the right lower extremity. On examination the patient presented a fine fistula in the region where the blow had been received; here a trephine was applied, and a portion of the skull was removed; this opened into an abscess containing 4 or 5 drachms of pus. Convalescence was rapid and full recovery reached with complete cessation of the epileptic attacks.

LYSOL, A NEW ANTISEPTIC.—DR. V. GERLACH presented to the Vienna Medical Society (*Inter. Klin. Rundschau*, June 15, 1890) a new antiseptic and-disinfectant. It belongs to the class of coal tar derivatives, is free from carbolic acid, its most important constituent being kresole. Lysol has more antiseptic power than either carbolic acid or creolin, and is not so poisonous. It has a constant chemical formula. It is cheap and abundant. Lysol is not only to be used in closets and to clean linen, but it is especially useful in medicine, as it is almost free from toxic properties. As an antiseptic for wounds it should be used in a strength of 1 per cent.; for washing out the uterus, etc., $\frac{1}{2}$ per cent.

4 Annual Report, Marine-Hospital Service, 1889, pp. 189-213.
5 Op. cit. p., 213.

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SATURDAY, JULY 26, 1890.

IMPORTANT MEDICAL LEGISLATION.

The Medical Society of the State of New York is to be congratulated upon the success which, after seven years of heroic effort, it has achieved in the advancement of medical education. To this organization more than to all other agencies or influences, the profession is indebted for the results that have been secured. In view of the action which has been taken by the House of Representatives it did seem for a time as though in the Empire State, where last of all we should anticipate defeat, the hands were to be turned back upon the dial of medical progress, and that in the long-drawn struggle illiteracy, joined hand-in-hand with selfish greed, was yet again to triumph. But at last the better counsels have prevailed and congratulations are in order.

The opposition to the present law, we regret to say, was not confined to sectarian schools alone, nor to such influences as charlatans could wield—but we think, unfortunately for them, some of our medical educators who should have been conspicuous in their efforts to secure the passage of the bill, are numbered with the opposition; seemingly from the fact that as the result of its beneficent working the patronage of their schools would be diminished—as it surely should and will be.

The law approved by the Governor on June 4, 1890, will mark a new era not only in New York but incidentally in the entire country. It cannot be said that in this contest, where every point has been fought out inch by inch, there is evidence of hasty and inconsiderate legislation.

The utterances of this bill are like decisions of the Supreme Court, from which there should be no appeal.

In the next number of THE JOURNAL we propose to present the bill entire, and we commend it to the careful consideration of our readers. As the result of such consideration the first cardinal point which occurs to us is this: that the State presumes to reaffirm and to emphasize the fact that it alone has jurisdiction over the practice of medicine within its own limits. It may not only determine as to who may practice medicine, but it also presumes to assert what the qualifications of its practitioners shall be. In the exercise of this power it recognizes the responsibilities which it assumes, and seeks to make the best provision. In the second place, it proposes to redeem the profession from illiteracy by the requirement of a satisfactory preliminary education as a condition to an entrance upon the study of medicine. In the third place, it provides for a definite and uniform standard of examinations, and each and every student must attain to that standard as a condition to graduation. In the fourth place, it divorces medical teaching from the licensing power. To this end the examining boards are under the supervision of special examiners, who are appointed by the regents, and who themselves cannot be members of those boards. And, finally, it compels the colleges to teach their students three years, instead of two.

We have, then, in this single bill, the requirements of preliminary education; a definite standard for examinations; a separation of teaching from the licensing power; and a three years' college course. Thus grandly has the State redeemed itself from what had threatened her, as a sad misfortune. It may be objected that among the provisions of this bill there has been an unwise recognition of sectarian schools. A careful study of the law gives evidence that there is one common power behind the separate boards, and that while they officiate as agents the power of decision rests alone in the Board of Regents. If this board shall perform its duties wisely and well, as we sincerely hope and anticipate, the State of New York will have little cause to fear from the illegitimate practice of medicine so long as the law shall remain in force. Besides, we are confident that a death-blow to sectarian medicine is never so wisely dealt, nor so sure of fatal result,

as when by law all medical students must attain to a high standard of education, and by that standard *stand or fall*.

MEDICAL EDUCATION IN ENGLAND.

The General Medical Council—the licensing and registering body for the United Kingdom—has been considering the question of an increase in the time devoted to a medical education. Hitherto the requirement has been a four years' graded course, including, as fundamental studies, the elements of chemistry, botany, physics and zoölogy. In the debate it was stated by SIR JOHN BANKS that in every other country in the world the medical curriculum lasted at least five years—a statement which, unfortunately, some persons in this country know not to be absolutely accurate. The proposition that the course of study should occupy five years was unanimously adopted, with the qualification, however, that satisfactory proof that the student had acquired the necessary knowledge of chemistry, physics and biology elsewhere should be accepted as equivalent to the first year of professional study. The fifth year, according to the proposed plan, is to be devoted to hospital or dispensary work. Six months of it, however, may be spent under the tuition of a practitioner holding a public appointment, or possessing such opportunities of imparting medical knowledge as may be satisfactory to the medical authorities. In order that the student may be able to give undivided attention to practical work during the last year, it is recommended that all examinations except those in the subjects of medicine, surgery and obstetrics should be completed before the commencement of that year. The preliminary examination includes English, Latin, arithmetic, algebra as far as simple equations, and three books of geometry.

With regard to the manner of imparting instruction, the importance of practical work is emphasized, and it is recommended that not more than three systematic lectures a week should be given in any one course, and that no student should be required to attend more than three lectures a day.

The Medical Council makes these propositions in the form of recommendations, although it has practically the power to make them obligatory. Probably the power will be exercised before long,

if the recommendation does not prove sufficient.

Will any one assert that these requirements are unreasonably high? Will any one pretend that if such were the standard in this country there would be any insufficiency in the number of physicians graduated, or that their quality would not be greatly improved? Will any one even seriously maintain that it is possible for a man to be a thoroughly competent practitioner of medicine without as much knowledge and experience as are implied in them? No one, of course, will deny that many of those who graduate with a much inferior professional equipment will, in the end, make good physicians—better, even, than many who comply with these requirements. Some will continue their studies after graduation in schools or hospitals, and make up, by their own conscientiousness, for the lack of conscience in those who ought to be the guardians of professional honor and the public health. Too many will, in the long run, acquire at the expense of their patients the knowledge which they ought to have had before they undertook to treat them. Graefe is sometimes credited with the saying that he spoiled a hatful of eyes before he learned to operate for cataract. Such a record may be pardoned to a pioneer in a hitherto unexplored field, but not when the road has already been made broad and plain by the labors of predecessors.

Who are interested in maintaining the present scandalous condition of medical education in this country? Not the great body of the profession, who, whatever may be their own qualifications, can only be injured by the competition of the hordes of half-taught men who are annually poured out by our medical schools. Not the conscientious students of medicine; they are bound in some way to supply the deficiencies of the curriculum, probably at greater trouble and expense than if the extra work they do were part of the required course. Certainly not the public at large. It may even be doubted if the aggregate profits of the medical schools are any larger than they would be with a longer course of study, as it is, to say the least, doubtful if the falling off in the number of students would not be more than compensated by the increased cost to each one. Probably most of those pecuniarily interested would be willing to make the change, if their competitors would do the same. Under the circumstances it seems rather a misfortune that we

have not a General Medical Council or a Minister of Education, or some other central authority, to impose on all what all see would be for the general good.

THE KOLA NUT OF AFRICA.

It has been announced that the Commissary Department of the German Army has been authorized to purchase thirty tons of the kola nut of the Western Soudan. It will be experimented with as an accessory food, to replace to some extent the ration of coffee and other caffeine-bearing substances. According to DR. HACKETT caffeine is not the only active principle in the kola, since he has found in it a red substance to which the name "kolaine" has been given. Other observers, among them GERMAIN SÉE, have asserted that caffeine is the sole energetic principle. The kolaine is said to differ from caffeine in having the property of controlling the waste of tissue during fatiguing exercise, while the latter, caffeine, is a muscle-stimulant. The most conflicting testimony given us by European experimenters with kola will not surprise us, when we bear in mind that, even in the Soudan, the home of the kola-tree, the natives who have been using it for many generations, ascribe very diverse properties to the nut. For example, in the cases of some it will produce sleep, while others will be kept wide awake by it; in some it assuages thirst while in others it has the opposite effect, and so too in regard to the supporting power of the nut under fatigue and muscular effort, the effects are described as being very far from uniform. The "personal equation," for one thing, has a most influential bearing in the study of this, to us, new drug, not only in regard to its alleged tonic and stimulant properties to the nervous system, but also to its employment as an accessory food during convalescence and physical exhaustion. The seeds of the *Sterculia acuminata*, the so-called kola nut, are found in the market mixed with considerable quantities, or proportions, of the seeds of *garcina kola* and *sterculia cordifolia*, which are declared to be relatively inert in regard to caffeine, and probably also in regard to kolaine. Here, also, we find an additional possible source for the discrepant results of different experimenters.

EDITORIAL NOTES.

A CHAIR OF THE HISTORY OF MEDICINE.—Referring to the fact that such a chair had been founded in the University School of Baltimore and that Dr. A. B. Lyman had been appointed the first professor. The *Lancet* raises the pertinent inquiry why a similar chair should not be established in the various universities in Europe.

THE SHATTUCK LECTURES.—These lectures were founded by the late Dr. Geo. B. Shattuck, of Boston. The first was delivered on June 10, before the Massachusetts Medical Society at its one hundred and ninth anniversary meeting.

QUACKERY IN ITALY.—Some of the methods adopted for the suppression of quackery in Italy might with great propriety be adopted in this country. It is found that in many of the prefects, dentists are not confining themselves to their own art, but are vending medicines, plasters and ointments which, as they assert, "are good for all kinds of diseases," thus infringing upon the prerogative of medical men. The prefects are directed by the Minister of the Interior to use every legal means for suppressing "not only the wrongful exercise of the healing profession generally, but more especially the pompous display of such illegal practices in public places," and the Mayors of Communes are instructed to "forbid such practitioners from occupying public spaces."

A MERITED RECOGNITION.—At the forty-seventh annual Commencement of the Fort Wayne College the degree of LL.D. was conferred upon Prof. W. W. Dawson, M.D., of Cincinnati. This is a timely and just tribute to Dr. Dawson, to whom the medical profession two years ago accorded its highest honor by electing him to the Presidency of the American Medical Association. It is the more complimentary from the fact that only three times in the history of that institution has this degree been conferred.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—W. C. Hollopeter, M.D., has been elected Lecturer on Diseases of Children; and Ernest B. Sangree, M.D., Director of the Histological Laboratory.

BELGIAN QUACKS IMPRISONED.—In Nivelles, Belgium, two quacks, named Vaudevoir and Dê-tret, have been sentenced to six months' imprisonment. Vaudevoir prescribed for patients and

made diagnoses while simulating hypnotic sleep. It was not necessary for patients to come in person, as equally good results were obtained if a piece of soiled linen that had been worn next to the person, was sent. By this method a patient suffering from an anal fistula was treated for a bronchial catarrh. Dr. Garlier, a physician associated with these swindlers, will soon be brought to trial.

THE ONTARIO MEDICAL ASSOCIATION.—This large and growing society held its tenth annual convention at Toronto, on June 11, 12. There were present 244 members, out of a total membership of 653; to this number has the Association grown since 1881, when its organization was effected with only 132 names upon its roll. Dr. Wm. Goodell, of Philadelphia, had been announced to deliver the principal address on the 11th ult., but was unfortunately prevented from attending. There was present, however, Dr. T. Addis Emmet, the veteran gynecologist of New York, who addressed the meeting with an interesting surgical discourse. Dr. Andrew H. Smith, of New York, was also one of the chief attractions of the gathering. He addressed the society on empyema and the mechanical results that ensue upon opening the thorax; his paper was illustrated by apparatus and was followed with closest attention. Other papers, with discussions, filled up the time of the general meeting and some special subjects were disposed of at the meetings of the Sections, the formation of which has been rendered necessary by the increasing volume of the scientific material prepared for the convention.

The following officers were elected for the ensuing year: President, Dr. W. H. Moorhouse, of London; Vice-President, Dr. Charles Sheard, of Toronto; Secretary, Dr. J. Gibb Wishart, of Toronto; Treasurer, Dr. E. J. Barrick. Among those who were elected to honorary fellowship in the Association, were Dr. E. M. Moore, of Rochester, and Dr. T. Addis Emmet, of New York.

THE SHEPARD HOSPITAL FOR THE INSANE.—The late Mr. Shepard, of Baltimore, left \$560,000 to found an asylum for the insane, instructing his executors to use the interest only. This was thirty years ago, and the building has been slowly going on until now when the work is

nearly finished. The buildings are worth \$880,000, while the estate has increased in value to \$583,637. The Shepard Asylum is one of the best endowed institutions of the kind in the country.

THE NORTH DAKOTA MEDICAL ASSOCIATION.—This new Association was organized at Jamestown, N. D., on May 27. Dr. H. W. Coe, of Mandan, was elected President; Dr. M. F. Merchant, of Ellendale, Vice-President; Dr. George McIntire, of Hillsboro, Secretary; and A. P. Rounsevell, of Larimore, Treasurer. The next annual session will be held May 25, 1891, at Fargo.

THE SOUTH DAKOTA MEDICAL ASSOCIATION has also been organized and officers elected as follows: Dr. J. W. Freeman, Central City, President; Dr. A. C. Warne, Mitchell, Secretary; and J. C. Morgan, Sioux Falls, Treasurer.

THE NEW YORK MEDICAL REGISTER FOR 1890.—This valuable little annual handbook has just appeared. It contains the registrable data of the 7,635 regular physicians who reside in New York, New Jersey and Connecticut, besides much information regarding pharmacists, nurses, periodicals and books, hospitals, colleges, societies and local laws for those three States. This is the twenty-eighth volume of the series. A copy of the book should be in every reference library in the country. It is published by the Putnams of New York City.

DR. JOHN A. WYETH, the eminent New York surgeon, will deliver the Address before the Mississippi Valley Medical Association, at Louisville, Ky., October 8. Quite a number of gentlemen prominent in medicine in the Mississippi Valley have signified their intention of being present and reading papers. The outlook for the meeting is very encouraging.

ITALIAN STUDENTS IN GERMANY.—Each year the number of Italian students attending the German Universities is increasing. In 1885, the number was 189; in 1886, 224; in 1887, 310; in 1888, 390; and in 1889, 535. Italy, so long the centre of culture and of refinement, is again fast advancing to a foremost position in the medical world, and the glories that were historic give promise in their renewal of still greater achievement in the days to come.

TOPICS OF THE WEEK.

ARABIAN SCIENCE AND LITERATURE.

There is no new thing under the sun; and the same eager curiosity which is felt in the nineteenth century concerning medical and other sciences, together with the thirst for literature, animated no less the men of remote nations and of other minds. This age, proud of its knowledge and inventions, is prone to forget how much it owes to the past and to the labors of others, who sowed that we might reap. To no people are we more indebted for the powerful impetus which was given to science and literature toward the close of the Middle Ages, than to the Saracens, whose intellectual and mechanical genius became a sort of bridge between ancient and modern civilization.

When the Arabians were aroused from their mental torpor by Mohammed, their zeal first took the form of warlike enterprises; but as the passion for conquest died away, all the energy of their keen and searching intellects was directed to the acquisition of knowledge. "Masters," says Sismondi, "of a great portion of the East; of the country of the Magi and the Chaldeans, whence the first light of knowledge had shone over the world; of the fertile Egypt, the storehouse of humane science; of Asia Minor, that smiling land, where poetry and taste and the fine arts had their birth; and of the burning plains of Africa, the country of impetuous eloquence and subtle intellect; the Arabians seemed to unite in themselves the advantages of all the nations which they had thus subjugated."

At a period when the rest of Europe was buried in bookless ignorance, the lamp of learning shed a fair, clear light over Mohammedan Spain, the principal seat of Arabian culture. Seventy public libraries were opened, and at Seville in 1000 A. D. was built the Giralda, the first astronomical observatory on record, and which, after the expulsion of the Arabs from Spain, was converted into a bell-tower for the cathedral.

During the Middle Ages, the Christian populations of Europe seem to have made but little progress either in the theory or practice of medicine. Among the primitive Spaniards, when any one was ailing he came and sat in a public place, and all his friends and acquaintances who passed by brought him such remedies as they fancied might prove beneficial—traces of which custom may still be discerned in America, as every physician knows to his sorrow. It was reserved for their Saracen conquerors to establish the first regular schools of the therapeutic science, where the works of Hippocrates and Galen were translated from the Greek and Latin, and adopted as the basis of instruction.

Toward the end of the tenth century, the great medical treatise by Ali-Ebn-Abbas appeared. It was entitled *El-Melekei*, or "The Royal," and was an enlargement and appendix to the Galenic teaching. Soon after Er-Razi, a professor of the Bagdad medical school, published his writings on pathology, containing the first authentic description of exanthematous diseases. Every other work in the Arab schools yielded precedence to the

Canon and Materia Medica of Avicenna, who was born 980 A. D., and received the title of Prince of Physicians. The Canon was divided into five books; the first and second treat of physiology, pathology, and hygiene; the third and fourth deal with the methods of treating disease; while the fifth describes the composition and preparation of remedies.

It was the Arab surgeons who invented the probang, and improved the lancet and couching needle; though in surgical and anatomical knowledge they made but little advancement, in consequence of their Islam prejudices which forbade dissection, while the Koran denounced as unclean the person who touched a dead body. Though chemistry had its rise among the Arabians, it never became a separate science, but, like botany, was studied chiefly as an auxiliary to medicine. The most important mercurial and arsenical preparations of the materia medica, the sulphates of several metals, the properties of acids and alkalies, the distillation of alcohol, were all known to the Arabs. Many terms borrowed from their language, together with the signs of drugs, are still in use among modern apothecaries.

Astronomy attracted much attention among the Arabians, and in the reign of Al-Mamoun, A.D. 813-833, great progress was made in that science. They also acquired much renown in mathematics. It was by means of Arabic translations that Euclid and Apollonius were introduced into Europe. Algebra, decimal arithmetic and numerals we owe to them, while their canals, water-works, sluices, reservoirs and the like attest their knowledge of hydraulics. They knew how to apply the rules of chemistry to all the necessary arts of life, and no European nation has ever surpassed the Arabians of Spain in agricultural prosperity.

Many inventions whose benefit to civilization is inestimable are due to these sons of the desert. From all antiquity the Chinese had made paper of silk, and this knowledge had extended to Samarcand. When that city fell into the hands of the all conquering Arabs, Joseph Amron carried the process to Mecca, his native city, and about 706 A. D. began to make paper from cotton. This invention spread through the length and breadth of the Mohammedan empire, and in Spain beautiful paper was manufactured from flax in the twelfth century. A century before gun-powder was known in Europe, the Arabians were familiar with it and its uses, an invention which has since wrought a complete change in the modes of warfare that had prevailed for ages. The compass was an Arabic invention, and was commonly used in Nubia as early as the twelfth century.¹

In the interests of botany and mineralogy, scholars spent their lives in travel and laborious research. Schools, colleges, academies and libraries sprang up under the generous patronage of the caliphs. During the reign of the noble Haroun-Al-Raschid and his illustrious son a school was attached to every mosque, and, as in New England under the sway of the Puritans, religion and education went hand in hand.

Philosophy, history, poetry, theology, grammar and

¹ This invention is claimed by the Chinese and by the Italians.

theotric were assiduously cultivated, and historical dictionaries were invented. The Oriental mind took special delight in story telling, and we can form some idea of the splendor of the Arab imagination from the Arabian Nights' Entertainments, which give pleasure to old and young.

It was doubtless a great surprise to the old Crusaders when they found the abhorred Mussulmans superior to themselves in polish, culture and scientific attainments. Though the verdict of later ages has condemned the religious enthusiasm which sent the chivalry of Europe over land and sea to rescue Palestine from the Saracen, their labor was not all in vain; for among them were men of noble, elevated minds, who were capable of receiving and assimilating truth and knowledge from whatever source it came, and when they returned to their own lands they carried with them precious seeds, which in the fulness of time were to bear such mighty fruit in the Revival of Learning, the Renaissance, the Reformation, and the blessings of civil and political liberty.—Stoddard, in *Classics*.—*Pacific Record*.

HONOR TO JOHN HOWARD.

At the great Congress for Prison Reform just concluded at St. Petersburg, one of the most successful sittings was the second, at which the distinguished crown lawyer, M. Spassowitsch, delivered an address on the two philanthropists of the eighteenth century—John Howard and the Italian Beccaria, both of them beneficent innovators in the treatment of the criminal classes. The address, from the interest of its subject and the reputation of M. Spassowitsch as one of the most brilliant orators of the Russian bar, attracted a numerous audience, which included many of the leading figures in St. Petersburg society. Referring to the fact that one hundred years ago John Howard closed the beautiful pilgrimage of his life on Russian soil, and left all that was mortal of him in the neighborhood of Cherson, M. Spassowitsch drew a striking picture of the philanthropist's last resting-place, on which stand a sun-dial and tablet, the latter bearing in Latin the touching inscription: "Whoever thou mayest be, thou standest at the grave of thy friend." Then followed a vivid sketch of Howard's career, with all its incidents, often romantic, ever rounding to his honor; and finally, a comparison of the reforms he initiated and brought to completion with those protected, in part successfully, by the Italian jurist Beccaria. The concluding words of the address were these: "I fain would have contented myself with pronouncing the name of this one philanthropist only, the English Howard, but I was unable to do so, for ever in my thoughts live the two benefactors of mankind, who are inseparable. Honor and fame be rendered to the glorious pair, the authors of the criminal reform of the eighteenth century, John Howard and Beccaria. Honor and fame to the people whose virtues are personified in them, the Saxon and the Latin. Honor and fame to the nations from which they have sprung. Long live England; long live Italy!" The rounds of applause with which these words were received attested how fully they

had interpreted the unanimous feeling of the Congress; and in the evening at the state banquet, at which the chief authorities of Russia, civil and military, were represented, toasts were given and acknowledged in the spirit which, earlier in the day, had found such genial expression in the address of M. Spassowitsch.—*Lancel*.

VITAL STATISTICS IN FRANCE AND GERMANY.

The following figures drawn from the publications of the German Imperial Statistical Office and the French *Journal Officiel*, respectively, are interesting as showing that if Napoleon's saying that "Providence is always on the side of the big battalions" is true, France will have little chance in any future struggle with Germany if the gospel according to Malthus continues to be accepted by her people as the whole duty of married man. In 1888 there were in the German Empire 376,654 marriages, 1,828,379 births and 1,209,793 deaths, the excess of births over deaths being 618,581, as against 605,155 in 1887. In France in the same year there were 276,848 marriages, 882,639 births, and 837,867 deaths, the excess of births over deaths being only 44,772, as compared with 56,536 in 1887. In Germany the marriages in 1888 exceeded those of 1887 by 5,995, and those of 1886 by 4,328; in France, on the other hand, there were fewer marriages in 1888 than in 1886 by 6,360. In Germany the birth-rate has been steadily rising since 1884, the increase in 1888 as compared with 1887 having been 2,818, and 78,505 as compared with 1883. In France there was a falling off in the number of births to the extent of 16,794 as compared with 1887, and the number was the lowest recorded since 1871. Since 1884 the birth-rate has been gradually falling, the difference between that year and 1888 being about 55,000. In round numbers the birth-rate in Germany is 38.1 and in France 23.1 per 1,000 inhabitants, while the excess of births over deaths is 12.9 per mille in the former, as against 1.1 per mille in the latter. Of the 87 departments in France, in only 44 was the number of births greater than the number of deaths; in the remaining 43 there were more deaths than births.

INTERNATIONAL MEDICAL CONGRESS.

In connection with the exhibition during the Congress at Berlin, the Imperial Board of Health is engaged in forming a special department for the illustration of medical and sanitary appliances. It is hoped that the various hygienic institutes and laboratories, as well as instrument makers and others, will largely contribute to the exhibits. The larger German towns will also probably show plans, etc., of the sanitation works carried out within them. All communications connected with this exhibition should be addressed to the Exhibition Committee, Karlstrasse, 19, Berlin, as soon as possible. At the request of the organizing committee of the Congress the following gentlemen have consented to form a Scottish committee in order to facilitate arrangements as regards Scottish members of the Congress: Mr. Joseph Bell, Mr. G. A. Berry, Mr. John Duncan, Professor T. R. Fraser, Professor W. T. Gairdner, Dr. G. A. Gibson, Dr. P. M'Bride, Sir George Macleod, Dr. Peel Ritchie, Professor A. R. Simpson, Professor Grainger Stewart, Dr. Tuke, and Sir William Turner. Professor Grainger Batty Stewart has been invited to accept the office of president of the committee.—*Lancel*.

PRACTICAL NOTES.

A HINT FOR FACILITATING THE MICROSCOPICAL EXAMINATION OF URINE.

When attempting to examine urine under the microscope, for casts, epithelial cells, and other organic bodies, a good deal of annoyance and difficulty is sometimes caused by urates, and also, when the specimen is not quite fresh, by fermentation and putrefactive products. In order to obviate this difficulty, and with the further view of preserving the specimen, Dr. M. Wendringer advises that the urine should be mixed with a nearly saturated solution of borax and boracic acid. This dissolves the urates, and keeps the urine from fermenting, and at the same time exercises no destructive effects upon the casts and epithelial elements which it is desired to examine. The solution is prepared by mixing twelve parts of powdered borax in one hundred parts of hot water, and then adding a similar quantity of boracic acid, stirring the mixture well. It is filtered while hot. On long standing, a small deposit crystallizes out, but clings to the side of the vessel, so that it does not interfere with the transparency of the liquid. The urine to be examined is put into a conical glass, and from a fifth to a third of its bulk of the boracic solution added to and agitated with it. The urine will be found to have become clear in a short time, *i. e.*, if there is no cloudiness due to bacteria; and it will remain unchanged for several days. If it is only wanted to clear the urine and to make it keep for a day or two, the addition of a smaller quantity of the boracic solution is sufficient. If a third of its bulk is added, no fermentation or putrefactive processes take place, even if the glass is left uncovered in warm places. Albumen, too, if it exists, is not coagulated. The organic elements—as epithelial cells, casts, blood corpuscles, etc., collect so quickly, without undergoing any morphological change, at the bottom of the glass, that the first drop taken up by the pipette, usually proves a satisfactory specimen.—*Lancet*.

DEATH FOLLOWING A URETHRAL INJECTION OF COCAINE.

Simes, in a recent number of the *Gaz. degli Ospitali*, records a somewhat remarkable case of death occurring after an injection of cocaine into the urethra. The patient was a man of 28 years of age, and preparatory to undergoing the operation of internal urethrotomy, had a gram of a 20 per cent. solution of cocaine injected into his urethra. Saving his urethral stricture the patient was in excellent health. Immediately after the injection the following phenomena supervened, namely, contraction of the muscles of the face, dilatation of the pupils, stoppage of the

breathing, and violent epileptiform convulsions. The convulsive signs continued to increase in severity, the respiration became more and more feeble, cyanosis became intense, and at the end of about twenty minutes, despite every care, the patient died. At the autopsy the lungs were normal, but extremely congested; the left ventricle contained no blood.—*The Medical Press*.

THE TREATMENT OF FLATULENT DYSPEPSIA.

In *Les Nouveaux Remèdes*, April 8, 1890, Dr. Huchard publishes a number of formulæ, which are claimed to be of value in the treatment of dyspepsia, especially with a view of preventing the development of flatulence. Among the remedies which the author has found most satisfactory, chloroform is the best. On account of its irritant action it should not be given in a state of purity or in capsules, as is so frequently done. The best mixture is claimed to be its administration in saturated chloroform water:

- R. Saturated chloroform water, 150 parts;
Distilled water, 120 parts;
Mint-water, 30 parts.

Of this mixture a tablespoonful may be taken either immediately before or during a meal.

The same dose may also be taken of the following formula:

- R. Saturated chloroform water, 140 parts;
Orange-flower water, 150 parts;
Tincture star anise (*Illicium anisatum*), 10 parts.

In the following preparation the chloroform is associated with gastric stimulants:

- R. Tincture of gentian,
Tincture of anise,
Tincture of nux vomica, āā 3j;
Chloroform-water, 20 to 40 drops.

After filtration, 10 to 20 drops of the above may be taken in a little water a quarter of an hour before eating.

When it is desired to employ the so-called absorbing powders the following formulæ may be prescribed:

- R. Powdered charcoal 3ij;
Sodium bicarbonate 3j½;
Calcined magnesias 3j;
Powdered Colombo 3ss.

Make 40 powders. One powder may be taken half an hour or an hour before, or, if an antiseptic action is desired, at the time of, eating:

- R. Beta-naphthol,
Salicylate of bismuth,
Magnesia, āā gr. xlv.

Make 30 powders, which may be administered as above.—*Therapeutic Gazette*.

OBSTRUCTION OF THE NOSE.

In treating obstruction of the nose, quinine and belladonna or cocaine will relieve the congestion; the patient also should snuff up the nose a mixture of camphor and boric acid; a cold bath to be taken each morning, to prevent taking cold.—*Coll. and Clin. Record*.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, December 18, 1889.

THE PRESIDENT, DR. CHARLES E. HAGNER, IN THE CHAIR.

DR. SWAN M. BURNETT presented a patient with *Tuberculosis of the Conjunctivæ*.

DR. C. W. RICHARDSON presented a patient showing a *Double Uvula*, and also read a paper on

ADENOID GROWTHS IN THE NASO-PHARYNX.

I offer no other excuse for bringing this subject to your consideration than its importance, which causes it to merit a thorough and exhaustive treatment at your hands.

Considering the lymphatic system of the pharynx as consisting of a continuous chain, presenting here and there aggregations forming the so-called tonsils, one would expect that changes incident to the one mass would be manifested also in the others. This has been acknowledged. These masses, or aggregations of lymphatic tissue, are variously designated lingual, faucial and pharyngeal tonsils. To-night we shall deal with the upper arch of the circle, the pharyngeal tonsil, which, when subjected to certain pathological changes, is known as "adenoid growths." These glands may be affected, I do not doubt, with many of the acute inflammatory changes to which its fellows, the faucial tonsils, are prone. According to Knight, Delavan and others, acute inflammation attended with marked enlargement of these glands has given rise to alarming symptoms; seeming errors in diagnosis have also resulted from these acute enlargements. In this article we have not to do with these acute hypertrophies (enlargements), but rather with that chronic—the result of frequent attacks of the acute form—or congenital condition coexisting almost with the birth of the individual. These growths do not make themselves manifest in any unpleasant manner until about the third year, although cases sufficiently urgent to require operative interference have been met with as early as the ninth month of life. They are said, like the other glandular tissues of the same group, to undergo atrophy about the age of puberty. This is true to a great extent, yet it must be accepted only in a relative degree.

These glands, when diseased and subjected to enlargement, vary greatly in number, size, density and position. Their density depends upon the amount of connective tissue present. Where glandular tissue is in excess, they are soft, friable, and readily break down under the finger. Should connective tissue predominate, they are dense, tough, and can only be torn away by the use of considerable force. They may vary only slightly

from the normal, or may completely fill out the naso-pharyngeal cavity. They may form a curtain-like mass extending transversely across the vault, more or less completely occluding the choanæ, or hang stalactite-like, round or clubbed-shaped at their extremities. They may form gigantic granules in the upper portion of the post-pharyngeal wall, or accumulate in masses around the orifices of the Eustachian tubes and filling out the fossæ of Rosenmüller.

The symptoms produced by the existence of this condition vary according to the amount of growth present, and the interference it causes to the performance of the physiological functions of those parts and organs dependent upon an unobstructed naso-pharyngeal cavity. A typical picture of that form of adenoid growth, causing sufficient impairment of the general health and special organs as to imperatively demand operative interference, I will attempt to delineate. You will find before you a child whose age is considerably in excess of his physical development. The facial expression is characteristic: complexion pale, face long and thin, cheeks sunken, nose pinched, eyes heavy, and a dark ring is usually observed below them, intensifying the want of color, the mouth is agap, and the lower lip, thickened and protruding, droops, thus exposing the lower teeth. As he sits, the whole countenance gives the impression of stupidity. The chest is small and contracted; examination will frequently reveal the existence of the characteristic chicken breast. When he responds to interrogations it will be noticed that his voice has a peculiar muffled, flat, dead sound, the pronunciation of the nasal consonants being entirely lost. They complain of want of energy, heaviness about head, a sense of constriction about chest, no desire to play with fellow, and of rapidly occurring fatigue when exercising. They are universally bad sleepers—in fact they never experience a night of continuous, uninterrupted, blissful repose until the growths have been removed. They toss about in bed, are extremely restless, have bad dreams, causing them to cry out in sleep, and on awakening to be greatly frightened, perspire about face and head, snore, and withal a peculiar method of respiration which is characteristic, *i. e.*, the inspiration being very much delayed after expiration, so as to cause a casual observer to fear that respiration has ceased. It is marvelous how these children, having their rest disturbed, possess the vivacity that is common to them. The information is elicited from parents or guardians that they have little inclination for study, and are consequently backward. This want of desire for study, or inability to hold the attention fixed upon any continuous thought or train of ideas, is a frequent manifestation in diseases of this character. They will read a sentence, and almost as quickly forget it; constant

repetition is indispensable to the acquisition of any information. This constant strain places the child at a great disadvantage. Finding they so readily forget, they become discouraged and throw their books aside. This condition may exist with regard to all subjects, or may affect the mind only in connection with particular ones. Prof. Guge, of Amsterdam, first called attention to this phenomenon, and to it he has given the name of aprosexia. Headache, fullness over the frontal sinuses, or a dull feeling about the head is always present. It will be observed, on inquiry, that the sense of smell does not exist, or is in abeyance. On testing the nasal cavities it will be found that they do not permit the passage of air, respiration being carried on solely through the buccal cavity. It will be observed, on examination with speculum, that the nasal cavities are sufficiently patulous to permit of free nasal respiration, so far as the anterior part of these chambers is concerned. When the obstruction to nasal respiration is complete, the mucous membrane is pale, of a pinkish hue, and the turbinated bodies present a condition on to atrophy rather than that of hypertrophy; but when obstruction is not absolute, the membrane is frequently congested. The faucial tonsils are frequently hypertrophied, presenting considerable enlargement, although the two conditions do not necessarily coexist. Another condition noted in the buccal cavity, dependent upon the existence of these growths, is the high arching of the hard palate. Deafness exists, more or less marked—perhaps a suppurating ear—and this condition, rather than the more distressing want of nasal respiration, has driven the parent to consult you. Salivary secretion may be, but nasal and post-nasal secretions are always in excess.

The pen picture I have just given is typical of this condition, and the symptoms those usually met with in cases where the growths exist in sufficient quantities to give rise to interference with nasal respiration.

Such a case as the one just enumerated would give rise to the inquiry as to where the obstruction existed. The nasal cavities are patulous, the oral pharyngeal cavity presents no obstruction; where can obstruction exist excepting between the two? It is only through the aid of the rhinoscopic mirror, or by digital exploration of the naso-pharyngeal cavity, that a positive diagnosis can be obtained. Some authorities depend solely upon the mirror, while others assert that no positive diagnosis can be made excepting through the aid of the index finger. I constantly employ both methods, the information obtained by the one being substantiated, strengthened and increased by the other. It is usual for me to make a rhinoscopic examination, and the evidences of the existence of the growths and their position having been obtained, then to resort to

digital exploration, in order to obtain information as to their extent and size. I never use means to hook forward the soft palate in rhinoscopy; I do not deny the possible usefulness of these agents, but think that many who resort to them could, by the exercise of the tact and patience they usually possess, soon find these artifices useless crutches. By the mirror we will observe these growths hanging like stalactites or rounded club-like masses from the pharyngeal vault, forming curtain-like masses, obstructing the view of the post-nasal orifices and filling out the inequalities in the lateral wall. It is only through the sense of touch that we are able to grasp the full idea of the extent of these growths. One must possess a well educated tactile sense, and a thorough knowledge of the topographical anatomy of the naso-pharyngeal cavity, in order to appreciate the information to be gained by this method of investigation. In making these investigations I never explain to the patient what my intentions are, unless they obstinately demand the why and wherefore. The method of procedure is as follows: Seated to the child's left, facing and slightly in front of it, the left hand being placed upon the head to give it support, he is requested to open widely the mouth. While the mouth is thus widely agap, and before they appreciate my intention, I rapidly insert the index finger of the right hand into the buccal cavity and onward to the post-pharyngeal wall, where the finger is usually arrested by the contraction of the pharynx and elevation of soft palate. This, the first and only resistance, is readily overcome by a little persistent and forced pressure. After passing constriction, the finger passes into the naso-pharyngeal cavity. Here the finger must be swept rapidly over choanæ, vault, orifices of Eustachian tubes, fossæ of Rosenmüller, and post-pharyngeal wall. The experienced finger will readily detect growths by their peculiar velvet-like feel, also likened to the sensation produced by feeling a bunch of earth-worms. These procedures must be accomplished with great rapidity, as the struggling child usually releases himself or forces you to release him in a few seconds. Unless the child under examination is remarkably tractable—I have seen several—the examination must be done thoroughly, as they will never, while retaining consciousness, permit another exploration. While these are the train of symptoms present in complete obstruction, there are cases attended with only partial obstruction, and others in which there is no obstruction to nasal respiration, although growths exist of sufficient size to give rise to annoying symptoms that can only be ameliorated by the removal of the hypertrophied glands. It is especially to this latter class of cases, and the relief of symptoms produced by them, that I wish particularly to direct your attention. This class manifest themselves by ex-

cessive nasal or post-nasal secretion, more or less impairment of the organ of audition, and a peculiar muffled sound of the voice. Secretion and excessive secretion is one of the most constant and, I might say, never failing evidence of the existence of this condition. The quantity of secretion is not always in proportion to the amount of glandular hypertrophy, nor can it be said to be in inverse ratio, although I have seen greater secretion in cases where simple knobs or protuberances existed at the vault, than where there was growth sufficient to completely occlude the post-nasal orifices. That this excess in secretion is dependent upon existence of the hypertrophied glands, and not entirely due to the catarrhal condition of the mucous membrane, and for the following reasons, viz.: There are a number of cases upon which we have employed every method usually successful in checking excessive secretion in nasal and post-nasal catarrhs, without any result whatever, where the subsequent resorting to operative interference, with removal of knobs, protuberances and existing masses of growth, have been attended with complete relief. By the restoration of many of these cases to the normal condition with operative interference alone; by the complete relief, by operative interference, of cases which have been subjected for months to a rigid course of nitrate of silver, iodine solutions, and various other agents employed in the hands of others. There also exists a class where the removal of hypertrophies, while not completely relieving the catarrhal secretion, yet lessens it to so great an extent that its complete cessation can be brought about by a little further judicious treatment. It is not necessary for me to give a long citation of cases to prove the facts mentioned above. I will mention a few while exhibiting specimens that I have brought to illustrate my paper. The importance of this condition as a factor in the production of excessive post-nasal secretion is, I regret to say, greatly overlooked. Many authorities, in writing upon this important subject, completely overlook this point, and to so great an extent as not to insist upon the necessity of complete removal of all existing growth—it is only necessary to remove as much as will give rise to free nasal respiration. Such dogmas I class as equal to those which state it is only necessary to remove a small portion of the faucial tonsils. I remove these as thoroughly and completely as I remove the faucial tonsils. There are a large number of cases under treatment, classed as post-nasal catarrh, dependent upon diverse pathological conditions, and which can not be treated intelligently or judiciously without first being subjected to a rhinoscopic or a digital examination, preferably both. It is largely due to the injudicious treatment, brought about by an imperfect knowledge of the pathological condition, that accounts for the large number of in-

curable cases of post-nasal catarrh and the opprobrium which exists with regard to the medical treatment of this condition. The importance of this can be illustrated no better than by mentioning the fact that of all children treated by me during the past twelve months in whom post-nasal catarrh existed as a prominent symptom, in over 50 per cent. there was present more or less hypertrophy of glandular tissue at vault of pharynx, removal of which, and restoration of the dome to its normal condition, was attended with the relief of all unpleasant symptoms. Disease of middle ear, catarrh, acute inflammation and suppurative inflammation are frequent concomitants of adenoid growths, and it is the existence of these conditions that frequently drives these unfortunate sufferers to our observation. Besides these cases where ear symptoms are so marked as to be observable to patients, there are others where commencing changes are only observable after careful examination. In this latter class operative interference is as imperative, in order to remove the existing cause and thus enable us to radically remove the condition, as in the former; in fact I consider operative interference a demand in all cases where adenoid growths exist, even though the ear be not involved, simply as a precautionary measure to prevent, at any subsequent period, the occurrence of an invasion of this important region.

Treatment.—As can be judged from previous remarks, there is, according to my idea, only one course to be pursued in the treatment of this condition—the complete and thorough extirpation of all hypertrophied tissue. It is unwise for one to dictate any special operative procedure, or the necessity of using any peculiarly constructed instruments, as essential in the operative treatment of these growths. In this connection, while not doubting that in some cases the index finger of certain surgeons might be capable of removing these glands, I doubt very much the index finger of any one possessing sufficient force to remove the firm fibrous growths I have observed in many of my cases. A much discussed question in this connection, and over which the most diverse opinions are held, is as to the advisability of producing general anæsthesia, and as to whether this state should be produced through the aid of ether or chloroform. Some assert that the operation is as painful as the amputation of a finger; others that it is almost painless. I consider the operation as far from being as painful as the former, or as completely devoid of pain. It is not necessary for me to give a résumé of the various instruments and operative procedures resorted to in removing these growths. I shall give you the method I usually adopt, and which I consider most expedient. I use the forceps, and they are made on the plan of the instrument devised by Löwenburg and modified by Franklin Hooper,

varying slightly in curves at cutting extremities. In regard to general anæsthesia, I accept a middle ground. Should the patient be under 10, over that age and timid, or desire the use of an anæsthetic, I always administer ether. Should the patient be over 10, and one in whom I may expect hearty coöperation, I usually operate with the aid of cocaine. In operating under general anæsthesia I adopt the upright position. The patient, being in the recumbent position, is thoroughly anæsthetized until relaxation is complete. He is then loosely bound in a sheet, head alone being free, and thus securely prevented from interfering with the operation he is placed in an upright position in the arms of an assistant. I always have the head of patient resting upon assistant's left shoulder, so that he can encircle head with corresponding arm, thus holding patient's head firm. Gag having been placed in mouth, the index finger of left hand is passed behind soft palate, where it acts not only as a guide to location of growths, but also as a palate retractor. The growths are now seized by forceps, guided by the right hand, and rapidly torn from their attachment. All having been removed, it is well to scrape over the mucous surface before removing index finger from pharyngeal cavity. The operation can be done so rapidly as to be completed before the patient has begun to be aroused from the quite profound anæsthesia. I have no fear of hæmorrhage in these cases, nor of the supposed danger of blood passing into larynx. Hæmorrhage is quite slight, and the small quantity of blood produced always passes into gullet. In this operation I always depend upon the sense of touch. In the second class of cases I simply resort to the local use of a 5 to 10 per cent. solution of cocaine. If the patient possesses sufficient fortitude and growths are not abundant, I usually finish the operation at one sitting. More frequently I resort to several sittings. In these cases I sometimes operate with, but more frequently without the aid of mirror. I call the mirror to my aid when growths are situated well forward or about mouth of Eustachian tube, a region where I am afraid of doing harm. Patients state that operation is painful, but I am sure that none find it quite as painful as they would the amputation of a finger; nevertheless, they come again, and I have never known one to fail an appointment. The after-treatment is very simple. There is nothing to do excepting the occasional spraying out of the naso-pharyngeal cavity. Before closing I must again insist upon the absolute necessity of the removal of every particle of growth present, and the complete restoration of the vault to its dome-like appearance.

DR. BRYAN said the subject of adenoid vegetation in the nasal pharynx was one that had greatly interested both the laryngologist and aurist since Meyer, of Copenhagen, first called

attention to the disease, in his original paper, by reporting 102 cases.

A fact that did not seem to be brought out in Dr. Richardson's paper is, that there are two stages of this affection: In the first stage, found in young children, the tissue is soft and friable, breaking down readily under pressure; in the second stage, which we find in later life, the tissue is hard and resisting to the touch, due to the increase of fibrous tissue. We do not speak of acute hypertrophy, for that condition is a result of chronic inflammation, and Dr. Delavan's case, which Dr. Richardson had quoted, could hardly be regarded in the light of a true hypertrophy of the tissue in the vault of the pharynx, but simply a swelling of the membrane, due to some temporary cause, and which disappeared as soon as the cause was removed. In young children the finger is a much more valuable aid to the diagnosis than the mirror; and in adults even, the mirror frequently gives us no idea of the extent of the diseased tissue, which can only be positively determined by the use of the probe.

In operating upon young children he always used ether, with the patient in the prone position, with the head depressed below the level of the shoulders. In this way there is no possible danger of blood, or excessive faucial secretions, getting into the trachea. When the patient is old enough, the operation is best done without the aid of an anæsthetic. In such cases he found the self-retaining palate retractor, of great aid. Another valuable instrument for operating upon this condition is Bosworth's Post-Nasal Curette which, together with the post-nasal cutting forceps of Gleitsman, will enable us to remove most, if not all, of the diseased tissue at one sitting.

DR. MURRAY coincided with Dr. Bryan in his view of hypertrophy. He thought with him that the recumbent position was the proper one whenever an anæsthetic is to be administered. Dr. Richardson has said that he has no fear of hæmorrhage in these operations, but serious hæmorrhage does occur; he probably meant that he did not fear hæmorrhage in the cases which he selected for operation. Dr. Murray was under the impression that at the last meeting of the American Laryngological Association a death was reported from hæmorrhage due to this cause. While attention had been called by several men, among the number Voltolini, who reported two cases, prior to the discussion of the subject by Meyer, of Copenhagen, he was the first to give an accurate description of the disease and its proper treatment. He found that in two thousand cases examined, the disease occurred in the proportion of one per cent. Doyer, of Leyden, says that five per cent. of school children are affected with the disease. Dr. Murray believed that in finding fifty per cent. of all the children brought to him to be suffering from the disease,

Dr. Richardson had had an unusual experience. The contraction of the chest found in these cases Luenberg had ascribed to the efforts of the diaphragm to overcome the obstruction to respiration caused by the growth in the naso-pharynx, the contractions corresponding to the attachment of that membrane to the parietes.

DR. RICHARDSON in closing the discussion said that he had used the word hypertrophy to mean enlargement, *i. e.*, simple inflammatory enlargement, and it was frequently used in such sense. Ether had never caused excessive salivary secretions in his cases. He had no fears of hæmorrhage. He had heard of hæmorrhage from tearing the mucous membrane; and whenever it occurred he attributed it to such tearing and not to the cutting of the adenoid growths.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Dr. Duplay's Address at La Charité Hôpital—The Pasteur Institute.

Dr. Duplay, who was recently appointed Professor of Clinical Surgery at La Charité Hôpital in the place of the late Professor Trélat, delivered a most interesting lecture on assuming his office. After having rendered a just tribute to the merits of his predecessor, he began by criticizing certain surgical tendencies which are just now in vogue in the profession. He said that within the last 15 or 20 years, a complete transformation has taken place in surgery. The introduction of antiseptic in surgical practice has contributed largely to this transformation. It is scarcely 20 years ago, in certain hospitals, and particularly in certain seasons, the smallest surgical intervention, or the most simple incision was followed by the occurrence of terrible accidents such as lymphangitis, phlegmon septicæmia, pyohæmia, etc. Antiseptic has altered all this, it has considerably diminished the duration of the treatment after an operation. Union by first intention which always failed to take place, is now the rule, and the wound resulting from the ablation of the breast, which took two months and more to cure by suppuration, is now healed by first intention in about eight days. Moreover, thanks to antiseptic, the surgeon can undertake with comparative safety operations which, formerly, he had not dared to do. He now fearlessly opens the articulations, and practices on the abdomen, in the diseases of the genital organs in women, the most daring operations. But while saying so much in favor of surgical antiseptic, Dr. Duplay pointed to the reverse side of the medal. He observed that there was a sort of operating mania, a *pruri-*

go secundi among certain surgeons, particularly among the young generation which he explained thus: Formerly, owing to the frequency of post-operative accidents, the surgeon decided upon intervening only when an operation appeared absolutely indispensable. Now, on the contrary, post-operative accidents have disappeared. Trusting to this impunity, the surgeon has a great tendency to intervene as soon as an operation appears practicable. The older surgeons hesitated a good deal to operate owing to the occurrence of consecutive accidents, they consequently carefully examined the parts affected, the general state of the patient, his temperament, and his antecedents, in a word the surgeon sought to make a rigorous diagnosis. Then the utility of the operation was discussed at some length, the question, if the chances of cure were equivalent to the gravity of the disease, was carefully weighed. Now, all these considerations had become secondary and often the diagnosis is effected by the operation. When it concerns a tumor, the surgeon scarcely occupies himself as to its nature. The tumor is removed, and, it is afterwards examined at leisure. In cases of an affection of the abdomen, the surgeons of to-day do not make those brilliant and delicate diagnoses made in former times. The abdomen is opened, the surgeon looks into it, and if there is nothing to be removed, he closes it. The same remarks may be applied to prognosis. The question whether the patient could be cured by other means was scarcely discussed, nor whether the benefits of the operation were sufficient to justify it. It is thus that the surgeon practiced on the face the most terrible operations for cancers of the tongue, pharynx, etc., and the patient succumbed with or without relapse, a few weeks after, without obtaining the least profit by the intervention. The ablations of the thyroid gland in goitrous subjects may seem very fine as operations, but, afterwards, the patients become affected with cachexia. In the midst of the hecatomb of Fallopian tubes and ovaries which some surgeons give themselves to, it is not considered whether a certain number of patients could be cured by other means. In depriving a patient of the reproductive faculty we give rise to troubles more or less serious in the patient's physical and moral condition. In all operations even when practiced under the strictest rules of antiseptic there is still one danger to be considered, and that is the least negligence in the application of this method suffices to compromise all. A catgut of bad quality, a solution very weak, a sponge badly prepared, might destroy one's assurance. Limited space will not permit me to enter more fully into Professor Duplay's interesting lecture. He concluded by observing that in this surgical revolution as well as in all others, there is good and bad, and he recommended that while the antiseptic

method should be religiously observed, clinical observation should never be neglected.

On June 4 a general meeting took place at the Pasteur Institute, when a report was read concerning the progress of the antirabic inoculations since the foundation of this method of treatment. The Institute is divided into two grand departments, viz.: one for treatment and the other for experiments. The treatment consists in simple inoculations, to which the French and foreigners bitten by a mad dog are submitted. Persons undergoing treatment are divided into three categories: 1. Persons for whom the rabies of the animal that bit is experimentally demonstrated by the development of rabies in an animal inoculated or bitten at the same time as the persons treated. 2. Persons for whom the rabies of the animal that bit is established by veterinary examination. 3. Persons bitten by animals suspected of rabies. The following is a statistic of the results obtained:

Year.	Persons treated.	Deaths.	Mortality, per cent.
1886	2,671	25	0.94
1887	1,770	13	0.73
1888	1,622	9	0.55
1889	1,830	6	0.33
Total	7,893	53	0.67

It may be remarked that the proportion of deaths is very feeble, and that the mortality is diminishing every year. This diminution is due to a better application of the treatment. M. Pasteur observed that it was at first difficult to know which formula of treatment should be adopted. He decided upon proportioning the injection to the gravity of the bite. In order to regulate this treatment he found it necessary to divide the bites into three categories: 1. Bites on the head and on the face. 2. Bites on the hands. 3. Bites on the limbs and elsewhere. In these three last years, of 7,893 persons treated 672 were bites on the head, 4,387 were bites on the hands, 2,834 were bites on the limbs. Thus it may be seen that the bites on the hands (56 per cent.) were very frequent. To the question as to whether rabies is more prevalent in some places than in others can only be answered by the creation of antirabic institutes in different parts of the world. It may, however, be observed that climate has no influence upon the question; and, contrary to what is generally supposed among the public as regards the influence of seasons, the maximum of cases takes place at the end of winter and at the commencement of spring. In June and July rabies diminishes, and increases after October till the month of February.

A. B.

In the German Empire, during the past five years, there has been an increase of 25 per cent. in the number of cases of insanity, against an increase of 3.5 per cent. in the population.

DOMESTIC CORRESPONDENCE.

Dry Method of Treating Wounds, or Antiseptic Surgery a Myth.

To the Editor:—With your permission I would like to make a brief reply to my friend Dr. Miller, of Helena, Mont., who along with a few other brave souls, has planted himself in front of the flood of antisepticism that is sweeping around the world, and proposes to turn back the tide and wipe out with a few strokes of the pen the supposed scientific labors of Pasteur, Koch, Lister and all that genus. Listerism—antisepticism, is reduced, according to his estimation, to a piece of common *Castile soap*, a basin of *slough water*, a *common kitchen towel*, dried in the air simply, and a bunch of *absorbent cotton*! If this is not what he means, then what does he mean?

Does he insist that the towel shall be ironed out with a very hot iron just before use, or that the water shall be boiled for ablution purposes? It does not so appear. If he admits the necessity of thus ironing the towel or boiling the water, he takes the force out of his pretended argument against antiseptic methods. The doctor was careful not to use the term aseptic, or mention the necessity of keeping a wound in an aseptic condition, for this likewise would have spoiled the best argument he could have made against Listerism or antisepticism. The moment a man acknowledges the importance of the aseptic condition of wounds, then he acknowledges that there are septic agencies to combat. Henceforth it becomes a matter of methods.

The doctor says in the first part of his article (July 5) that all the benefits of wound dressing "are summed up in cleanliness, and the practically dry and infrequent dressing."

Again he says: "If microorganisms were the cause of the unfavorable results of wounds, it has long since been demonstrated that any of the so-called germicides, to be efficient, would likewise destroy the patient."

And again in the last paragraph he says: "I had reasoned that if there were inimical germs in the air, they were likely to be worse in the water, the former being nature's purifying agent."

If the three above quotations are considered carefully they convey considerable confusion of thought. Can any one tell whether the doctor believes there are any germs anywhere inimical to wound healing? Either there are or are not such germs. We must all take one side or the other of this question. There is no middle ground. If there are no germs inimical to wound healing in the atmosphere or in water, why do these gentlemen insist upon or even concede the necessity of "scrupulous cleanliness" in operations or the dressing of wounds? Cleanliness from what?

And how do we obtain that end? If there are no germs that promote suppuration, septicæmia, pyæmia, and interfere with the healing of wounds, pray tell me what is the use of going to the trouble of even so much as to wash off the parts with un-boiled slough or hydrant water? Why wash at all, the instruments, the hands, the part to be operated on, the wound or anything whatever? Those individuals who are feebly endeavoring to block the wheels of progress in antiseptic surgery are willing to concede that there has been a wonderful drop in the mortality of accidental and operative wounds within the last twenty years. And to what do they attribute this grand result? Is it possible that ablutions with slough water and the "dry dressing" should have all the credit? If so matters are much simplified. It occurs to me that most all those members of the profession who talk about cleanliness in contradistinction to antiseptic surgery, or cleanliness as constituting the sum and substance of antiseptic surgery, are frequently playing upon words. They boil the water they use; their sponges have been soaked in a chemical agent; their instruments have been carefully washed and dipped into a chemical agent, or passed through the blaze of a spirit lamp; hands carefully ablated in a chemical agent, etc. It is quite likely they will eschew carbolic acid because that would give them away, and some friend might ask why they had taken up that "exploded Listerism?" But the moment it is conceded that scrupulous cleanliness is essential in wound treatment, it is conceded that there is something very important to be kept out of wounds. What do the quibblers call this important something? Is it simply inert dirt, or is it something that possesses vitality and can multiply in the wound? Is there any so bold as to say it is not an organic germ? But says the doctor, "If microorganisms were the cause of the unfavorable results of wounds . . . the so-called germicides, to be efficient, would likewise destroy the patient." The author is not clear as to whether there are any germs "inimical" to wounds, but is quite clear that there is no agent that will destroy them without destroying the patient; yet he advises the most scrupulous cleanliness, and for what, and how? The doctor intimates that if there are germs in the air there are more in the water, hence the necessity of keeping water away from the wound and applying the dry dressing. So it is not clear that he even uses slough water for cleansing purposes. What liquid is it?

It has been settled long since that there can be no such thing as fermentation, decomposition, septicæmia or pyæmia in the absence of bacteria, and in presence of this fact why should any one use the language, "If microorganisms were the cause of the unfavorable results of wounds?" If not bacteria, what are you endeavoring to keep out of the wound? Why do you close the wound,

perfectly coapt the surfaces and apply pressure to keep them so? Why not close the wound with the interrupted suture and leave it then exposed to the air—would not this keep it dry enough? Why do you want the wound hermetically sealed, as it were? These are all pertinent questions.

I am not contending against the practice of perfectly coapting the surfaces of a freshly made, cleanly cut, aseptic, operative wound, and applying a dry aseptic or antiseptic dressing, if you please, to said wound, with sufficient pressure to keep those surfaces in perfect apposition and exclude all atmospheric germs. This is Listerism, this is antisepticism. But let us not hear the remark that the germ theory of the poisoning of wounds is a myth, and that there are no methods known to science by which said germs can be destroyed or kept from poisoning wounds without at the same time destroying the life of the patient. Men who practice surgery on the last mentioned principles, at the present day, had better be sure that their numerous cases of death from septicæmia and pyæmia do not come up for adjudication in the courts, for they would surely be held accountable for malpractice.

A. C. SIMONTON, M.D.

San Jose, Cal., July 12, 1890.

NECROLOGY.

Willis F. Westmoreland, M.D.,

It is with mournful heart that we chronicle the death on the 27th of June, of Dr. Willis F. Westmoreland, of Atlanta. We feel that every reader of the *Journal* will join in our sorrow over the demise of this truly great man. For many years he has stood as a landmark to the profession of this and neighboring States, and his commanding figure has been as well known and as widely recognized as his splendid reputation as a surgeon and his unsurpassed skill as a diagnostician.

Dr. Westmoreland was born in Fayette county, Georgia, on the 1st of January, 1828. His early education was received in a neighborhood school of his native county, and was completed at a high school in Griffin, Ga. He attended his first course of lectures in the Medical College of Georgia, in 1848 and 1849. At the close of the latter year he entered as a student Jefferson Medical College, Philadelphia, from which he graduated in 1850 with a class of which Wm. H. Pancoast, S. Weir Mitchell and other eminent physicians were members.

Returning to Georgia he commenced the practice of medicine in his native county, but in July, 1851, removed to Atlanta, where he practiced successfully until the fall of 1852. At that

period he placed himself under the special instruction of Dr. Paul F. Eve, Professor of Surgery in the Medical Department of the University at Nashville, Tenn., where he remained eight months. In the winter of 1852 he visited Paris, and became an attendant upon the lectures of Velpeau, Nelaton, Ricord and other eminent surgeons, for about two years. In 1854, while still in Paris, he was chosen Professor of Surgery in the Atlanta Medical College, a position which he held and whose duties he fulfilled to the day of his death. In 1855 he founded the *Atlanta Medical and Surgical Journal*, and was actively connected with its management for more than twenty years. At the time of his death he still held a position on its editorial staff. In 1856 he again visited Europe, and spent several months in Paris, perfecting himself in the art of surgery. On his return he located in Atlanta and rapidly built up a large and lucrative practice. When the war between the States came on, he offered his services to the Southern Confederacy, and they were promptly and cordially accepted. He served until the surrender at Appomattox, when he returned to Atlanta and resumed the practice of his profession. As the years rolled by his fame increased, until it extended to every State in the Union, and he came to be looked upon as the foremost surgeon of the South. For a few years before his death he was in feeble health, yet he remained at his post, and many a time arose from a bed of sickness to minister to the sufferings of others. When the hand of death was finally laid upon him, he went to his grave full of honors, and carrying with him the love, the respect and the admiration of all who knew him. He leaves a son, Dr. Willis F. Westmoreland, Jr., and a daughter, Mrs. John Rommel, of Philadelphia, to mourn a loss which to them is as irreparable as it is to the profession and to the community in which he lived. Editorial, *Atlanta Medical and Surgical Journal*.

Charles Linaeus Allen, M.D.

Dr. Charles Linaeus Allen died suddenly of apoplexy at Rutland, Vt., on July 2, aged 70 years; was born in Brattleboro on June 21, 1820. He was graduated from Middlebury College in 1842, and from the Castleton Medical College in 1846. The deceased was a professor in Castleton Medical College before the war and afterwards became president of the institution. He left there, however, to accept the professorship of civil and military hygiene in the University of Vermont at Burlington. While there he went to the war and was appointed a member of the examining board of brigade surgeons, being associated with those celebrated physicians, Drs. Clymer and Brinton. He resigned the position in 1864. He was a member of the local board of

pension examiners, and with the exception of the time during Cleveland's administration he had been connected with the board since the close of the war. In 1857 he was acting professor of chemistry and of materia medica in Middlebury College.

Dr. Allen was secretary of the State Board of Health, and had been connected with the board since its organization; he did a vast amount of work as secretary, for which he received no compensation. He edited the *Sanitary Visitor*, and did much valuable work in the interest of the health of the State.

The deceased was the first president of the Rutland Medical Club, an honored member of the Vermont State Medical Society, of the American Medical Association, the American Academy of Medicine, also the International Medical Association, always attending the meetings of each if it was possible to do so. He was an honorary alumnus of Rush Medical College of Chicago.

Dr. Allen was a gentleman in every sense of the word, quiet and unassuming in his manner, and a general favorite with all his acquaintances. He was highly esteemed by his professional brethren, who often sought his advice and counsel in difficult and obscure cases. His consulting practice was large throughout the State and often extended outside. He was possessed of rare common sense, logical and accurate in his conclusions, and regarded as an excellent diagnostician.

He was a brother of Prof. J. Adams Allen, LL.D., dean of Rush Medical College.

The Death of Sir Edwin Chadwick.

The death of the "Father of English Sanitation," Sir Edwin Chadwick, is announced as having taken place July 5, at the ripe age of 90 years, as a remote consequence upon an attack of the epidemic influenza sustained by him last winter. Chadwick was one of the best minds of his day and nation, the peer of many whose names are far more widely known. He began his labors in the sanitary field as early as 1832, and continuously busied himself therein during nearly sixty years. The achievements of his life's work are marvelous in their variety and success, and England, but especially the poor of England, owe Chadwick a debt of gratitude that never will be adequately paid. The little, trivial honor of knighthood was meted out to him, late in his life, as a recognition of his services in the saving of human life, the amelioration of the sufferings of children in factories, and other vast sanitary labors. This was the Government's estimate of his worth and works, but Chadwick found his most hearty welcome when he went among the medical men and health officers of England, as he often did, and he often expressed himself as feeling most "at

home" among medical men whenever he was permitted to discuss with them his favorite themes about the maintenance of the public health. It was only a few days before his death that he received a diploma of honorary membership from the New York Medico-Legal Society.

ASSOCIATION NEWS.

Report of Committee on Dr. Freire's Claim to have Discovered the Yellow Fever Germ.

To the Section on State Medicine of the American Medical Association.—Your Committee to whom the reports of Drs. Freire and Sternberg were referred for an expression of opinion on the present status of Dr. Freire's claim to have discovered the yellow fever germ, and his ability to prevent the disease by inoculation, respectfully report that Dr. Freire's professed discoveries still need verification. That Dr. Sternberg appears to have made a diligent and experimental study, thoroughly going over the whole ground of Dr. Freire's experiments with such particularity as to carry conviction to the mind of your Committee that the germ of yellow fever is yet to be discovered.

A. N. BELL, M.D.,
R. RUTHERFORD, M.D.,
C. A. LINDSLAY, M.D.
Committee.

May 21, 1890.

MISCELLANY.

LETTERS RECEIVED.

Dr. A. R. Small, Chicago; Dr. W. B. Harrison, Columbia, Tenn.; Dr. F. J. Groner, Big Rapids, Mich.; Dr. M. L. Somers, Altoona, Kan.; Dr. J. H. Devor, Fort London, Pa.; Dr. A. W. Sidney, Fitchburg, Mass.; Dr. W. A. Dietrich, Lookout Mountain, Tenn.; Farwell & Rhines, Watertown, N. Y.; Dr. F. King, Dr. T. H. Manley, New York; Dr. Henry O. Marcy, Dr. J. L. Williams, Boston, Mass.; F. Koeller, Pittsburg, Pa.; Dr. W. H. H. Hntton, Baltimore, Md.; The Drevet Mfg. Co., New York; Dr. E. F. Brush, Mt. Vernon, New York; Dr. H. L. Watson, Hartford, Vt.; Dr. C. H. Bradley, Haverhill, Mass.; Dr. J. E. Boylan, Dr. W. W. Dawson, Dr. G. H. Goode, Dr. O. P. Holt: Cincinnati Polyclinic, The Cincinnati Gravure Co., Cincinnati; Dr. J. C. Lange, Pittsburg, Pa.; Dr. J. T. Ball, Judson, Ind.; Dr. J. T. Wood, Toledo, O.; Dr. J. C. Hoag, Chicago; Dr. B. E. McKenzie, Toronto, Can.; Dr. A. C. Simonton, San Jose, Cal.; Parke, Davis & Co., Detroit, Mich.; Dr. O. T. Maxon, S. Evanston, Ill.; Dr. D. Streett, Baltimore, Md.; West Penn. Med. College, Pittsburg, Pa.; The Medical Herald, St. Joseph, Mo.; Dr. W. F. Reynolds, York, Neb.; Dr. J. G. McDougal, New Lexington; Dr. T. L. Wright, Bellefontaine, O., Miner & Elbreg, Indianapolis, Ind.; Dr. Cephas Park, Oquawka, Ill.; J. Astier, Paris, France; Dr. J. B. Matteson, Brooklyn, N. Y.; Dr. E. E. Montgomery, Philadelphia; J. P. Kaster, Albuquerque, N. M.; Dr. T. L. Wright, Bellefontaine, O.;

New Orleans Publishing Co., New Orleans, La.; Maltine Mfg. Co., J. H. Bates, Dr. R. B. James, Dr. J. A. Cutter, Dr. T. H. Manley, Dr. J. Shradv, New York; Battle & Co., St. Louis, Mo.; Dr. M. Gibson, Wilkes-Barre, Pa.; Chas. H. Fuller, Chicago Polyclinic, Dr. E. F. Ingals, Chicago; Thompson S. Westcott, Dr. E. E. Montgomery, Philadelphia; Dr. Jonas M. Cleland, Sioux City, Ia.; Doliber, Goodale & Co., Boston, Mass.; Dr. B. L. Hovey, Rochester, N. Y.; Pantagraph Printing and St'y Co., Bloomington, Ill.; Dr. N. Senn, Kiel, Germany; Allen & Yates, Buffalo, N. Y.; Dr. Wm. Porter, St. Louis, Mo.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 12, 1890, to July 18, 1890.

Capt. William H. Arthur, Asst. Surgeon, is granted leave of absence for three months, to take effect September 15, 1890, or as soon thereafter as his services can be spared. By direction of the Secretary of War. Par. 1, S. O. 160, A. G. O., Washington, July 11, 1890.
Capt. Louis M. Maus, Asst. Surgeon, leave of absence on surgeon's certificate of disability granted in S. O. 4, January 6, 1890, from this office, is extended six months on account of sickness. By direction of the Secretary of War. Par. 16, S. O. 160, A. G. O., Washington, July 11, 1890.
Col. Charles Page, Asst. Surgeon-General, Medical Director of the Department, is granted leave of absence for one month, to take effect on the 30th inst. Par. 3, S. O. 91, Dept. of the Missouri, St. Louis, Mo., July 14, 1890.
Capt. William H. Corbusier, Asst. Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability, with permission to leave the Div. of the Missouri. By direction of the Secretary of War. Par. 4, S. O. 162, A. G. O., Washington, July 14, 1890.
Capt. John L. Phillips, Asst. Surgeon, is granted leave of absence for two months. By direction of the Secretary of War. Par. 4, S. O. 164, A. G. O., Hdqrs. of the Army, Washington, July 16, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending July 19, 1890.

Asst. Surgeon E. W. Auzard, detached from U. S. S. "Galena" and wait orders.
Surgeon A. C. Eckstein, granted leave of absence for month of August.
Medical Inspector T. N. Penrose, granted leave of absence for two weeks.
P. A. Surgeon A. G. Cabell, granted leave of absence for the month of August.
P. A. Surgeon Richard Ashbridge, granted one month's sick leave.
Surgeon T. C. Heyl, granted leave of absence for the month of August.
Medical Inspector Geo. H. Cooke, detached from Navy Yard, League Island, and to the "Pensacola."
Medical Inspector C. H. White, detached from the "Pensacola," proceed home and wait orders.
Medical Inspector A. A. Hochling, detached from Naval Hospital, Washington, and to League Island Navy Yard.
Medical Inspector H. M. Wells, detached from Museum of Hygiene and to Naval Hospital, Washington.
Asst. Surgeon James M. Whitfield, ordered to U. S. S. "Ajax" and other monitors.
Medical Inspector Theoron Woolverton, ordered to the U. S. S. "Philadelphia."
P. A. Surgeon P. A. Lovering, detached from the U. S. revenue str. "Wabash" and to the U. S. S. "Philadelphia."
Asst. Surgeon T. B. Bailey, detached from the U. S. S. "St. Louis" and to the U. S. S. "Philadelphia."
P. A. Surgeon S. S. White, ordered to the Marine Rendezvous, San Francisco, Cal.

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ORIGINAL ARTICLES.

ASEPSIS VERSUS ANTISEPTICS IN OBSTETRICS AS A PREVENTIVE OF PUERPERAL SEPTICÆMIA.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY T. B. GREENLEY, M.D.,
OF WEST POINT, KY.

The history of medicine suggests to the mind a history of theories, hypotheses and dogmas, from the time of the founding of the School at Alexandria under the guidance of Erasistratus and Herophilus, two of the principal professors. This was 300 years before Christ.

The profession then became divided into two sects, known as the dogmatists and the empirics. The former, sometimes styled the rationalists, contended that before prescribing for the sick we should endeavor to learn the nature of the disease by ascertaining its cause; whilst the empirics "contended that this knowledge was impossible to be obtained, and if possible not necessary," and that experience should be our sole guide, and if we should step beyond that "we are liable to commit dangerous and often fatal errors."

This division of the profession continued several centuries—"all physicians being included in one or the other of these rival sects;" the two schools being about equal as to numbers.

About the commencement of the Christian era a new sect was founded by Themison, of Laodicia. This sect was termed the methodics, who seemed to have occupied middle ground between the dogmatists and the empirics. The methodics became to be the fashionable or most prominent sect, which position it held for the first two centuries of our era. About this time they broke up, when the two sects, pneumatics and eclectics followed.

During the first few centuries of the Christian era several able medical authors arose, among them the celebrated Galen, whose opinions remained unchallenged till the sixteenth century, when his works were publicly burned by that insane quack, Paracelsus. In the fifteenth century the sect called the "chemical physicians arose, who claimed that all the phenomena of the living

body could be explained by the chemical laws as those which rule inorganic matter." Paracelsus belonged to this sect.

In the seventeenth century another chemical sect was instituted, which differed from the former in that they believed all diseases were due to humors causing fermentation in the blood—"that certain humors are naturally acid and others alkaline, and that if one or the other of these predominated, certain specific diseases were the result." This sect was termed the humoral pathologists.

This dogma, however, was soon succeeded by the mathematical or iatro-mathematical school. "As this school gained ground, that of the chemists declined." Another rival sect at this time made its appearance under the title of vitalists, which originated with Van Helmont. Sydenham rather leaned towards the chemists, but "did not allow his speculative views to interfere with his treatment."

Haller, an eminent pupil of the great Boerhaave and the father of modern physiology, had some prominent opponents to his theory of irritability and sensibility. Cullen, who, in the last century, did a great deal to establish medicine on a firm and reliable basis, had, as he said, to contend with many baseless theories as well as false facts. His contemporary, Dr. John Brown, was the father of the so-called Brunonian theory, which spread to a considerable extent over Europe, and especially in Italy. It, however, did not seem to take to any great extent in this country. His doctrine was, that all diseases were divided into two classes, the sthenic and asthenic, and were to be treated accordingly—the former by sedatives and the latter by stimulants.

About the time the Brunonian theory expired, Hahnemann published his work entitled "Organon of Medicine," by which disease was to be treated by similars, infinitesimally administered.

Since that time many pathies and isms, *id genus omne*, have made their appearance and had their advocates. Medicine, like all other sciences, has made progress by coming in contact with antagonistic forces, and we may truly say that if any science ever had to make headway against a multiplicity of adverse forces it has been medicine. It has been, and you might say, is still, a kind of shuttlecock, against which every one so inclined

may play battledoor, and notwithstanding the players are usually defeated, they generally leave something good behind. And to make the rule good we can make one exception, to wit: that wild quack Paracelsus; and even he, with all his fanatical absurdities, in conjunction with his chemical followers, evolved some metallic remedies. One reason why medicine has had so many adverse dogmas to combat, is the frequent introduction of extreme ideas without a basis of common sense, and which seemed so absurd to the minds of thinking men that new theories were instituted in order to combat these extremes. Many sects, doubtless, have originated from this cause. No doubt the extreme dosage and profuse blood-letting period induced Hahnemann to improvise his system of small dosage. The same might be said in regard to the introduction of Thompsonianism in this country. So many patients were deformed and destroyed by salivation and blood-letting, it was thought that the herb plan in connection with steam, might not be so dangerous to life. Then it will be seen that it is not well to allow the pendulum of medicine to swing too far either one way or the other.

The science of medicine was at a stand-still in Europe for more than half a score of centuries after the death of Galen. During that time, however, some advances were being made in Arabia by the great Avicenna and others. This might be termed the inactive, or dark age of medicine, the practice being merely a routine by the Galenists.

These remarks were suggested and regarded as being *apropos* to what I have to say in regard to the present controversy respecting the use of antiseptics in obstetrics as a prophylaxis to puerperal fever.

The various uses of so-called antiseptics are based on the hypothesis that the atmosphere is a great sea filled with pathogenic germs; and that by the use of these agents we are enabled to prevent their contact with wounded or raw surfaces, or to destroy them should they so come in contact.

My object in writing this paper is to inquire whether the great benefit claimed be due to their use, or to other means instituted at the same time?

At the time Prof. Lister commenced the use of his antiseptic dressings, he also instituted a method of absolute cleanliness in his surgical wards, hitherto unpracticed and even unknown.

The means of cleanliness he employed no doubt were the main factors to which was due his great success over former methods of managing surgical cases; and doubtless his death-rate would have been but little greater had he used a diminished paraphernalia in dressing. This fact has since been demonstrated in Bartholomew Hospital by Mr. Savary.

The same may be said as it respects gynecological surgery. This fact is made palpable by the

great and unprecedented success of Mr. Tait, Dr. Bantock and others. Mr. Keith, following the directions of Prof. Lister in the use of the spray, lost several patients by its use, when he abandoned it, and now employs simply aseptic means. This much by way of prelude to the subject under consideration.

It is well known that, before Listerism or antiseptics were introduced into surgery, the lying-in hospitals of Europe were mere death-traps to lying-in women—ranging in mortality from 5 to 19 per cent., and this mainly due to puerperal septicæmia. During seasons of epidemics it greatly exceeded this rate. At these times, in some hospitals, nearly every woman died.

In 1866, Lefort's investigations show that the average mortality in lying-in hospitals was one in twenty-nine, and in cities one in 212 cases, showing very plainly that the cause of the disease existed within the walls of the institutions.

As soon as a method of cleanliness and proper ventilation was instituted in these hospitals, a great change took place for the better. These happy results, however, were mainly attributed to antiseptics rather than a sepsis. This plan consisted, mainly, in the use of vaginal injections of carbolic acid, both during labor and after. These injections were kept up for ten days or two weeks, and some went so far as even to inject the womb, once or twice a day. The general strength of these injections was 1 to 40, or about 2.5 per cent.

To be sure, there were many other things used as preventive means, such as clean hands on the part of both physicians and nurses. Everything about the patient and the room must be scrupulously clean. She must take a bath and be sponged off well with a bichloride solution, 1-1,000, and the vulva and pubes thoroughly disinfected. Even the walls, floor and furniture of the room must be scrubbed and washed with bichloride solution.¹

These injections were used in order to destroy any germs that might be present in the vagina, as well as to prevent their introduction.

Now, for a moment, let us see what effect the carbolic solution injections into the vagina during labor will produce. In the first place, the mucus of the parts, which is the natural lubricant of the canal to promote the passage of the head, is washed out; the surface of the organ being to some extent rendered dry by the irritating action of the drug; besides it must, in some degree, worry the patient, at a time when her mind is greatly distressed. These effects would naturally tend to protract the labor.

One would, on reflection, suppose but little good would result from the use of vaginal injections after labor, as far as the removal or destruction of germs that might be present in the organ is concerned. The lining membrane is now in

¹ See Gaillard Thomas' Address, N. Y. Medical Journal, December, 1883.

folds, and should there be any germs hid away in these folds or rugæ, they would not be molested by the small stream of fluid passed by a Davidson or Higginson syringe. Then this operation is to be repeated several times in the twenty-four hours, at a time when the patient needs rest and should be disturbed as little as possible, to say nothing of the danger that might result from the frequent application of the solution. Then again, the frequent introduction of the nozzle of the syringe into a lacerated canal would greatly tend to prevent healing, to say nothing of the danger of the introduction of septic matter by the finger of the nurse, or germs from the atmosphere. The general directions in regard to the cleanliness of the patient and her surroundings are most admirable.

Dr. Garrigues,² of New York Maternity Hospital, introduced a different plan of antiseptics from that by injections. He uses what he terms a bichloride pad to the vulva. This is confined to the parts by being fastened back and front to a binder. The pad is renewed three times a day.

According to Dr. Gaillard Thomas there might result danger from confining the lochial discharge in contact with the lacerated or wounded surfaces. He says:³ "In every case of child bearing the cervix, vaginal mucous membrane, perineum and vulva are in varying degrees lacerated; and in every case the offensive fluid, called lochia, poisons these freshly made, unprotected wounds." But doctors will disagree. Dr. T., instead of confining the lochia in the vaginal canal, washes it out with carbolic solution. Although Dr. Garrigues claims better success with the use of his pad as a prophylactic against septicaemia than had by injections, yet it would seem still safer, in order to guard against the contingencies alluded to by Dr. Thomas, to introduce a drainage tube through the pad to allow the escape of the lochia as it comes down from the womb.

Dr. G. uses a very strong solution of the bichloride, 1-2000, both to saturate his pad and to inject into the womb after a labor requiring the introduction of the hand or instrument; also in washing out the womb in the treatment of puerperal fever.

Dr. Baruch,⁴ of New York, in 1884, made a tabular statement from the report of various lying-in hospitals of Europe, comparing the results of those using carbolic acid injections prophylactically, with those where it was not used. The table stood as follows:

HOSPITALS IN WHICH INJECTIONS WERE PRACTICED.	Mortality per cent.
Charité (Hartman)	2.5
Charité, '79 to '81 (Gusserow)	1.5
Charité, '82, Gusserow and Somerbrodt	1.6
Maternity at Parma	3.42
Glasgow Maternity (New building)	1.56

HOSPITALS IN WHICH INJECTIONS WERE NOT USED.

	Mortality per cent.
Pavillon (Tarnier to June '83) . . . . .	.00
Prague Maternity (Breisky and Weber, '80) . . . . .	.46
Prague Maternity (Breisky and Weber, '80) . . . . .	.56
Breisky and Fischel, '81 . . . . .	.21
Breisky's ward, '82 . . . . .	.00
Copenhagen maternity, '80 . . . . .	.26
Copenhagen maternity, '81 . . . . .	.50
Prague, 1,100 cases, '83 . . . . .	.00
New York Maternity, 3d series, Dr. Garrigues . . . . .	.00

It will be seen, then, from this table that the advantage is greatly in favor of those institutions where prophylactic injections were not used. Then on what grounds can we attribute the great change effected in the prevention of puerperal sepsis within the last decade if not to cleanliness, together with better ventilation and less crowding? The answer will be made more palpable when we come to examine the germicidal properties of some of the agents used as antiseptics. The difference of success between those who use and those who do not use injections, the sanitary environments being the same, must be attributed to the irritating or poisonous effects of the drugs used. Then why not put into practical use the discovery made by Pasteur more than a score of years ago, to-wit: that atmospheric air could be rendered entirely aseptic by filtering through cotton cloth? This being true the Lister dressing to wounds could be greatly modified as well as simplified. He has already dispensed with a part of his original dressing, and changed some of the antiseptic agents. He dispensed with the spray some time ago, and I am informed by a friend, who paid him a visit last year, that he has also laid aside the protective and the Mackintosh parts of his dressing. He has also lately changed the use of the bichloride of mercury for that of the double cyanide of mercury and zinc; and I predict that if he lives another decade he will have dispensed with all dressing saturated with irritating so-called antiseptics, and acting on Pasteur's discovery, apply simply clean cloths and bandages. I make this prediction on the hypothesis, that as an acute observer he will readily detect any imperfection or ill effect in his dressing and change accordingly; or, in the words of Gaillard Thomas, "let the errors of to-day be corrected by the wisdom of to-morrow." No one should be wedded to a principle so closely as to dogmatically adhere to it when he perceives it is wrong, and so far Lister has escaped this charge.

He is still experimenting in order to develop the best. As soon as he discovered the spray to be irritating and useless he discarded it, and so in other things. I have thought it strange he did not discard the protective long since, as I could not see what efficacy it possessed, but rather harm, as it was applied immediately over the orifices of the drainage tubes and must have

² N. Y. Med. Journal, March 1, 1884.

³ See N. Y. Journal, December 15, 1883.

⁴ New York Medical Journal, March 22, 1884.

prevented the escape of the discharge from the wound. And as to the Mackintosh, although it was applied to prevent the possibility of entrance of microbes to the wound, that end was already secured by the abundance of the different kinds of gauze dressings.

To show how we may be mistaken in our views of new and not thoroughly tried plans of treatment, we only have to refer to the able address of Mr. MacCormac in 1879, before a branch of the British Medical Association, in London. He, as well as Sir Joseph Lister, Watson Cheyne and others, urged the great importance of observing all the minutiae and detail of the Lister plan, and if this was not strictly adhered to, failure was apt to result. Great stress was laid on the beneficial effects of the spray—in fact more importance was attached to the use of that than any other element of the dressing. This was particularly pointed out as the means *par excellence*, to be used in the safe management of ovariectomy, or any case where laparotomy has to be performed. But, not long after this, as before referred to, the acute observation of Dr. Keith confirmed him that he was poisoning and destroying his patients by its use. Professor L. soon followed Dr. Keith in dispensing with its use on account of its irritating effects. I presume it is not now used by any surgeon. In discussing Mr. MacCormac's address, Sir Joseph was generally accorded due credit for having introduced a new principle in the management of wounds, and a majority agreed with him that true antiseptic treatment consisted in the close observance of all the details of the method, without which success would not be assured. Sir James Paget, although awarding great credit to Sir Joseph, pointed out the fact, that great improvement in the sanitary condition of the British hospitals had already commenced, and that in his opinion cleanliness was the true secret of success.

In order to illustrate the danger of such dogmatic assertions as that the Lister plan of managing wounds, or that injections of antiseptics in obstetrics were infallible as preventives to septicemia, and if failure occurred when any of these details were omitted, the attending surgeon or physician was responsible, any one in the profession was liable to be mulcted into heavy damages in case of malpractice suit. Since the discussion of that address many changes have taken place in the minds of men, and we can now begin to see that the medical pendulum was allowed to swing too far to the left. And now a malpractice suit would be as liable for commission as it would then have been for omission.

It would seem from the present status of opinion that a majority of prominent obstetricians regard the cause of puerperal septicæmia to be heterogenous and of course preventable.

This septic ferment, they say, may be com-

municated by the hands or clothing of the physician or nurse, and may consist of septic matter from a patient affected with the disease, from an unhealthy sore or ulcer, erysipelas, measles or scarlatina, and matter from a cadaver. Now to the view of an old-time observer it seems strange that so many different causes may, or can, produce a disease varying so greatly in its characteristics from those whose specific causes develop results peculiar to those causes, and are usually regarded as *sui generis* in character. Were I to carry the microbe of erysipelas to a puerperal patient, and evil results followed, I would expect to see erysipelas in some form. If measles, then in case the patient was not protected, I would look for the development of that disease; also the same as it respects scarlatina. And I cannot see how the causes of these diseases can deleteriously affect the patient if she is protected by having previously had the diseases.

I am now aware that an attack of erysipelas at the time of accouchment greatly endangers the life of the patient, like probably most any other inflammatory disease. But admit the possibility of the causes of these diseases affecting the patient deleteriously, could we prevent it by douching the vagina, as the cause does not gain entrance into the system through that channel?

We have never heard of the causes of these diseases proving deleterious to any other character of patients, no difference what might be the character of the disease with which they were affected, provided they were protected by a previous attack. Of course I alluded to the communication through clothing. We all know that a hospital ward may become so infected with the cause of erysipelas as to render it dangerous to perform a surgical operation. In fact, I have known on one or more occasions the epidemic influence to be so great, even in the country, the same thing happened. The last epidemic of this kind was in 1862-1863, during the winter months, when we could not vaccinate a person with safety, and although there was a case of small-pox in the neighborhood, we had to cease vaccination. Does not puerperal fever at times prevail epidemically without our knowledge being capable to comprehend its cause? This occurs also as it regards scarlatina and other diseases. You cannot prevent the occurrence of scarlatina by isolation of the children when the disease is of epidemic form, no more than you can influenza. There will always be some things that we are unable to account for in our philosophy, and I think epidemic influence is one of them.

I regard it as a dangerous doctrine to proclaim that puerperal fever is entirely due to heterogenous septic matter, and is a preventable disease. I think with our eminent accoucheur Fordyce Barker and others that we may, and occasionally do, have the *old* form of the disease, to wit: in-

inflammation of the womb and adjacent structures. I will agree that a great deal can be done, and has been done in lying-in Institutions by sanitary means, to prevent the disease, and have thought strange that such death-holes were allowed to remain uncleaned to within the last score of years. I have also been unable to account for the fact that patients were allowed to be placed in such Institutions, when it was so well known to the managers the great dangers attendant on such admissions; especially when they knew, at the same time, that no such dangerous influences existed outside. All the cases of puerperal fever that have occurred in my practice—some four in number—have been isolated ones, when no other cases existed in the country, and when I was attending no cases of contagious or septic disease. To be sure I have had, like most other accoucheurs, cases of what are ordinarily known or termed milk fever, the patient having chilly sensations, followed by reactive fever, which would last twenty-four to thirty-six hours. Then again I have had one or more cases where fever resulted from lacerated cervix, lasting from three to five days. But fortunately I have never seen an epidemic of the disease, although I have been practicing medicine, mainly in the country, forty-five years. Aside from the cases above alluded to I have been called to see a few in consultation, one of which was a case of septicæmia resulting from a dead embryo of about three or four months.⁵ The patient complained of chilly sensations on Friday—so much so as to induce her to think she had the chills, and caused her to take quinine. She was not aware of the fact that she was pregnant, then nursing a baby 8 months old. These chilly feelings continued, and on Sunday she had labor pains, which that evening expelled the foetus, leaving the secundines behind. The attending physician did not deem it essential to empty the womb and waited the expulsion of its contents. This state of things continued until I saw her on the following Wednesday noon, when the lochial discharge was very offensive and her temperature high, alternating with rigors.

I immediately emptied the womb and washed it out thoroughly with carbolic solution, 1 per cent. This was repeated again that evening, after which the discharge was devoid of unpleasant odor. The placenta was entirely putrid.

Now here was a case of septicæmia coming on before even the membranes were ruptured; at least there had been no pain or discharge until two days after the rigors and fever set up. The question now is, how did the cause enter from without? We may entertain very plausible theories in regard to disease, but every now and then we meet with a case that we are unable to account for on our preconceived hypothesis. I

think, in this particular, respecting the cause of puerperal fever, the pendulum is being allowed to swing too far to the left. Then again, I think too many great men entertain too great a dread of pathogenic germs in the atmosphere. I never could believe that the atmosphere of ordinary sanitary localities was permeated with disease producing germs. Were this so, the life of man would be much shorter than it is; in fact, the world would be in danger of being soon depopulated; especially would this be the case, if, as it is claimed, they multiply so rapidly. Neither do I believe, as some maintain, that all diseases are due to specific germs. If this theory was true there would be but few people well at any one time, as it is contended that in a case of sickness is the time when the germs increase so rapidly, and of course would make it dangerous for both nurses and physicians to render attention. As far as this theory is concerned it might be said that history is repeating itself, as this doctrine was promulgated by the humoral pathologists in the 17th century. They contended that all diseases were due to a species of fermentation in the blood.

In order to illustrate the fact that all bad effects are not due to germs in the atmosphere in treating wounds, I will mention the results of open stump dressings in the surgical wards of Bellevue Hospital by Dr. Dennis in 1876, while interne in the service of Dr. James R. Wood.

The mortality at that time in that Institution was 35 per cent. of the surgical operations, and rarely a case escaped abscess pyæmia or erysipelas. He reported fourteen successive cases of amputation treated with open wounds, simply placing over the stump a thin cloth moistened with a weak solution of carbolic acid. They all recovered without symptoms of pyæmia, and with but little rise of temperature. This was done without the use of spray, and simply with the dressing alluded to.

In the opinion of Dr. D., the difference in favor of the open wound dressing over that of closure and bandaging was due to better drainage; that the old method confined the discharge within the wound, producing high temperature, pyæmia, etc.

Prof. Link, of Indianapolis, also has reported greater success in the treatment of amputations with open stumps, over that of the closed dressing.

Now we will for a moment inquire into the germicidal properties of some of the most prominent of the so-called antiseptics.

At the head of these stand the bichloride of mercury which is the germicide *par excellence* above all others; but at the same time, perhaps, the most dangerous. It destroys all bacterial life promptly, but when uncautiously used on large raw surfaces may result disastrously to the patient, by absorption.

Yet, can this active and destructive germicide be

⁵ See Practitioner and News, April 26, 1890.

strictly an antiseptic where it may, and frequently does produce, perhaps, the worst state of sepsis of any known drug or substance aside from its chemical congeners? This is a question I have frequently thought of in connection with it as an antiseptic, and could but think it somewhat paradoxical. In coming in contact with blood or serum the albuminate of mercury is formed and its virtue as a germicide is destroyed.

Next, the corrosive chloride in general use, has been carbolic acid. But it has been, within a few years, found to be an uncertain germicide, as well as a dangerous poison—especially is this the case when applied sufficiently concentrated to destroy microbes. Dr. Marcy says, 1-40 generally fails to destroy bacteria, and 1-20 should be in contact several minutes to be effective, which could not be done with safety to a raw surface. Dr. Sternberg says, a 5 per cent. solution failed to destroy the micrococcus from pus; and remarks that as a disinfectant it must be at least 5 per cent. strong, and allowed to be in contact two hours at least. Dr. Koch states "that the surgeon who washes his hands and instruments in a solution of the strength of 1-40, and trusts thereby for the protection of his patients, would certainly endanger them to infection." Of course such strong solutions could not, with safety, be applied to raw surfaces sufficiently long to produce germicidal effects. And lately Prof. Billroth has issued a note of warning against the use of carbolic acid on raw surfaces on account of its poisonous effects, several cases of gangrene from its use having come under his observation. There is but little doubt, that a great number of patients have been destroyed by the improper use of both carbolic acid and corrosive sublimate. In the reports of lying-in hospitals of deaths due to puerperal septicæmia, those occurring from other causes during the puerperal state were not included in the list, and in all probability many died from the excessive use of these irritating substances, during the height of the fashion of injecting the vagina and womb as a prophylactic measure to septicæmia. Many cases in private practice have been reported, and it is very likely that many more were left unreported. Such dangerous remedies, as much as possible, should be withheld from the hands of the ignorant. Of all the so-called germicides, these two have been the most used, and that of carbolic acid the longest.

Next to these in the list, perhaps, oil of eucalyptus, iodoform and boracic acid have been mostly relied on, neither of which, according to late observations, have much, if any, germicidal virtue. Iodoform, which is regarded as being third in the list as to its germicidal properties, has been found, in that particular, to be practically inert, the bacteria growing in it as a culture bed. Turpentine, balsam of Peru, thymol, nap-

thalin, chloride of zinc, alcohol, etc., possess slight germicidal properties in concentrated solutions. Iodoform, with many other things in the long list, have been relied on as germicides, and the successful results placed to their credit. This is another reason why I think our fears have been unnecessarily excited as to the great number, and danger of germs in the atmosphere. If we fight an invisible foe with harmless weapons and come out conqueror, it should excite some doubt in our minds, either as to the virtue of our arms or the presence of the adversary. But notwithstanding the want of germicidal virtues in many agents that have been, and are still being used as germicides, I do not wish to be understood that I regard them as useless as remedial agents. On the other hand, I regard many of them as being, in the proper strength, as among our best remedies, both internal and external. Time will not permit me to go into detail as to their remedial virtues, but I regard them in the light of alteratives rather than that of germicides. In fact a number of them are so useful in this particular we are unable to dispense with them in practice. Among the germicides in recent use is creolin, which has been greatly lauded for its virtues in this regard, but it is learned that its virtue in the strength prescribed is virtually inert. It is said to promote suppuration.

My object in writing this paper is to caution the medical brethren against extreme assertions as to the success of any special plan of treatment, and making it incumbent upon all to closely follow in minutia and detail such theories and plans until they have been thoroughly tested and found, without doubt, that success necessarily and essentially depends upon such close adherence; and thus avoid liability to malpractice suits by those failing to be fashionable. I am finding no fault with Mr. Lister and his early followers for instituting and practicing a new principle in surgery as it respects hospital practice, but only in being so dogmatic in their assertions that success entirely depended on closely observing every detail in his method. This should not have been proclaimed until it was thoroughly proved to be so. As before remarked, a short time only was required to prove the erroneousness of the assertion. But in the meantime, many able men who could not see the necessity of such armamentarium in surgical practice, to say nothing of its expense and inconvenience, had they failed in any case, would have been held responsible for such failure.

Simply because it has been learned that this great success was due to simple cleanliness rather than to the germicidal and antiseptic virtues of the agents used in dressing wounds, the fame which attaches to the name of Lister should not be in the least diminished. But for his introduction into practice of a new principle, the inauguration of

sepsis in treating wounds, as well as diseases, would have, no doubt, been somewhat deferred. His success over the old time practice induced men of brains to commence thinking, which is the only way great reformations can be brought about. But unfortunately great discoveries are, in their application, many times carried to excess, which, doubtless was the case with the Lister antiseptics, as it respects their use in obstetrics. The conservative views entertained heretofore as it regards parturition were soon exchanged by many for those of a radical character. Instead of regarding parturition as a natural and physiological process, it was deemed to be pathological, and the puerperi was looked upon in the same light as a case of amputation, and of course must be treated accordingly. This view led to the use of injections of irritating and poisonous drugs to prevent septicaemia.

I only wish to put in a plea of conservatism, by which the medical pendulum will be prevented from swinging too far to one side.

GUNSHOT WOUNDS OF THE ABDOMEN; WITH CASES.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY DAVID BARROW, M.D.,
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J. G., æt. 15, was shot in the abdomen at 7 p. m. on February 8, 1890. The wound was one inch and a half to the left of and on line with the umbilicus, and was made by a 32-calibre ball. The pistol was discharged at close range. I saw him at ten p.m. He was then in bed with the lower extremities flexed; vomiting was frequent, and he complained of great abdominal pain; the facial expression was anxious, and the abdomen was hard and retracted; pulse was over a hundred and rather weak; shock was evident but not extreme. The wound was not probed, but it was plain that the cavity had been entered and all the symptoms pointed to visceral wounds. Laparotomy was indicated, and at eleven o'clock, by lamp light, I operated, assisted by Drs. Bryan, Keller and Scott. Chloroform was administered and several times during the operation the patient's condition was alarming. An incision of four inches was made in the linea alba, between the umbilicus and pubis. A loop of the intestine presented, but owing to the extreme rigidity and retraction of the abdominal walls, manipulations were unsatisfactory, so I enlarged the incision to six inches. Passing two fingers into the cavity the wound of entrance was felt; the ball had passed backward and upward. Tracing the intestines I found six perforations, four in the small and two in the large bowel. These were closed by the Czerny-Lembert suture, using fine intestinal silk,

and in one of the perforations of the large bowel, on account of the great bruising and ecchymosis, I reinforced the stitches and bruised tissue with omentum. There was not much hæmorrhage and no feces were seen. Irrigation was copious and thorough, and considerable water was left in the cavity. A glass drainage tube was inserted, with one end between the bladder and rectum; the incision was closed with silk. The duration of the operation was an hour and fifteen minutes. Chloroform was taken badly, and a great part of the time, all intra-peritoneal manipulations were resisted by the forcible contraction of the abdominal muscles, and the operation was thus greatly prolonged. Boiled cistern water was used. Antiseptic dressings were applied, and the patient was greatly shocked when placed in bed; the heart's action was rapid and weak, and the respiration was shallow. Reaction was slow and he vomited occasionally for eight hours. On account of some pain and great restlessness morphine was given in small doses for ten days. The drainage tube was emptied frequently and was removed on the sixth day. Convalescence was uneventful. The bowels were moved on the seventh day, and stitches taken out on the eighth. There were several stitch abscesses and a small superficial part of the incision healed by granulation. Three weeks after the operation, on account of imprudence in diet, he had a severe attack of indigestion, with much vomiting, and was greatly exhausted. He is now perfectly well.

C. D., æt. 13, was wounded by a 32-calibre ball at four p.m., July 1889. I saw him a few minutes later and had him taken to his home several squares away on a stretcher. I operated at 8 p. m., assisted by Drs. Brown, Molloy, Colman and Evans. At the time of operation there was no symptoms indicating serious injury; there had been no vomiting; the pulse was eighty and regular; and the boy was comparatively comfortable. The ball had entered two inches to the right of and one inch below the level of the umbilicus, and a probe passed directly into the peritoneal cavity. Chloroform was administered, and I made a four inch vertical incision, and included in the incision the bullet wound. The ball had passed downward and to the right. Tracing the intestines five perforations were found, two in the ilium and three in the cæcum. These were sutured with fine silk by the Czerny-Lembert method; the cavity was irrigated with boiled distilled water; the abdomen was closed and antiseptic dressings applied. Duration of operation a half hour. There was no shock when put to bed and he rallied promptly from the anæsthesia. For two days he did well when the temperature went up to 101° and he began to vomit. The abdomen was reopened, and irrigated with boiled distilled water and a rubber drainage tube in-

sented. He died at the end of the third day of septic peritonitis. *Post mortem* demonstrated all perforations securely closed; there was no leak when the gut was distended with water; some loops of the intestines were adherent, and there were several ounces of bloody fluid in the peritoneal cavity. The boy should have recovered, and, I believe, would have, had I inserted a glass drainage tube at the time of the operation. The operation was done in a negro's cabin, and the hygienic surroundings were most unfavorable.

In a paper read at the last meeting of the Kentucky State Medical Society on "Four Cases of Gunshot Wound of the Abdomen Treated by Laparotomy, With Remarks," and published in *THE JOURNAL*, June 15, 1889, I reported all of my cases up to that time. Since then, I have had the two just reported, making six laparotomies I have done for gunshot wounds of the abdomen. Of the first four, three died and one recovered, and of the last two one died and one recovered.

Dr. T. S. K. Morton, of Philadelphia, read in the Surgical Section, at the last meeting of this Association, an instructive paper on "Abdominal Section for Traumatism," and in it gave a complete table, containing nearly all the reported cases of gunshot wounds of the abdomen treated by laparotomy. From a study of this table, and my own cases, I am enabled, I think, to demonstrate much that is still apparently unsettled in the minds of some surgeons relative to the management of these wounds. The table contains one hundred and ten cases, and these should be sufficient to establish many facts in the management of such wounds. That laparotomy should be done when called to one of these patients is no longer debatable, for with the "let alone" plan of treatment nearly all die, and with laparotomy a third recover. This mortality will certainly decrease, and I hope before many meetings of this Association shall have passed by, and when surgeons learn to act promptly, that half or even more of these cases will be saved. The necessity for prompt action is well shown—of the thirty operated upon fifteen, or more, hours after the wounds were received, six recovered and twenty-four died, giving a mortality in these delayed operations of eighty per cent. The great danger is septic peritonitis, and that will often appear very quickly; frequently in a few hours there is evidence of its presence. We should operate to prevent this septic condition that is so certain to follow wounds of the peritoneum, and to procrastinate until this septic inflammation is inaugurated, is a timid and disastrous method of dealing with these wounds, and will necessarily be followed by a very large mortality. Of the seventy-four deaths recorded, thirteen were due to septic peritonitis, directly dependent upon delayed operations. When the operation has been delayed

and there is septic infection and shock, the patient can stand but little manipulation, and if the operation be prolonged from any cause, he may die on the table or may never rally from the shock. An ideal operation cannot be done when this is the condition, so we must "operate strictly to save life." No good will be accomplished by closing the wounds neatly, if the patient dies from the prolonged effort necessary. In these desperate cases, I believe more can be saved by opening the abdomen, inserting multiple drainage tubes, irrigating frequently, and adopting the open peritoneal treatment.

In only nine of the cases is the duration of the operation given, and in every instance where it was much prolonged, the patient died. Dogs and other animals will die of shock, if kept under the influence of an anæsthetic for a long time, and the viscera manipulated, and it will be disastrous to anticipate a favorable termination in gunshot wounds, when from two to four hours is often spent in doing the laparotomy. As to the evidence the surgeon should have to justify his opening the abdomen, I think the facts will bear me out in this very positive statement: When there is proof of the ball having entered the peritoneal cavity, it is the duty of the surgeon to open the abdomen and remedy, as best he can, the abnormal conditions there found. Eight times the abdomen was opened and no viscus found wounded. Six of the operations were done promptly and all of the patients recovered; but in two, the operations were delayed, in one to the fourth and in the other to the sixth days, and both resulted fatally. *Post mortem* examinations proved the absence of visceral wounds, and that septic peritonitis had been the cause of the deaths. Had these two patients been operated upon promptly, as were the other six, and the peritoneal cavities thoroughly cleansed, they too, I believe would have been saved. If the six had not been treated promptly, the probabilities are, that some of them would have died of septic peritonitis. Believing, when the bullet has penetrated the peritoneal cavity, that the abdomen must be opened and the cavity cleansed, even should the alimentary canal escape injury, I can see but little use of the hydrogen gas test. There are twenty-one cases where the alimentary canal was not wounded, eleven recovered and ten died. Of course the test would have given negative results, but I venture none of us will doubt but what the operations should have been performed. The test has been applied to nine cases and failed but once to indicate the true condition of the alimentary canal, and then there were five perforations of the small intestines. In another the result was negative, the operation was delayed six days, and then done for septic inflammation, and the *post mortem* examination demonstrated the absence of visceral wounds.

The hydrogen gas test can only be of use to prove the thoroughness of an operation just before closing the abdominal incision. Seven times perforations were overlooked, and had the gas been used, they might have been found and closed. Dr. Senn detected an overlooked perforation with the gas before closing the incision, and succeeded in saving his patient. In wounds of the liver the hæmorrhage must be controlled. Nine of the fifteen cases reported died. To stay the hæmorrhage we may suture the wound, pack it with gauze, or apply the cautery. A glass tube inserted through the track of the ball, as has been suggested, might be of benefit in controlling the hæmorrhage, and by carrying off all septic materials. Styptics might be applied to the bleeding surface through the tube with good results. Of the five kidney wounds all of the patients died except one, and she was saved by removing the wounded kidney.

In abdominal operations there is nothing more essential to success than thorough irrigation, and in laparotomy for gunshot wounds, this is, if possible, more important than in laparotomy for other causes, for here the peritoneal cavity often has thrown into it septic material from the digestive track. It is most difficult indeed to wash the peritoneal cavity clean, and I have no doubt that, in many of the cases where irrigation is noted, the cleaning process was imperfectly done and practically useless. The table can throw no light on this subject, but to every one who has operated in the abdomen, no argument will be necessary to convince him of the importance of thorough irrigation. The best and simplest irrigator I have ever seen is one used by Dr. Joseph Price, of Philadelphia, consisting of a funnel, a rubber tube and a large perforated nozzle. The force of the current can be regulated by elevating or depressing the funnel, and if the nozzle be properly directed amongst the intestines, all loose materials will be floated through the incision. The effect of drainage is forcibly shown, and though out of the one hundred and ten operations, the use or non-use of the drainage tube is mentioned in but twenty-nine, these are sufficient to justify the strongest conclusions. Of the twenty-nine cases drainage was used in twenty-one, and in eight there was no drainage employed; of the drainage cases six recovered and fifteen died, and of the non-drainage cases two recovered and six died, in the former a mortality of $71\frac{1}{2}$ per cent., and in the latter of 75 per cent. This is a stronger argument than at first appears, for the use of the drainage tube for the cases usually regarded by surgeons as requiring drainage, are the more desperate ones, and those where it is usually dispensed with are considered favorable. So necessary is drainage, that I will, even at the risk of being tedious, refer in detail to some of the cases where

drainage was employed and others where it was not. Of the six recoveries where drainage tubes were used, five were desperate cases and could not have been saved without the drains. In one case there was "intense peritonitis" at the time of operation, and the tube was kept in place for ten days; in another the operation was delayed for 108 hours, and besides the perforations, there was in the peritoneal cavity, bloody serum and pus; a third was Dr. M. Price's case, the liver and right kidney were wounded, and the latter organ was removed, and during convalescence several small hepatic abscesses formed and were discharged; and in two of the three remaining cases, the wounds were extensive, and blood, food and feces were found in the peritoneal cavities. In the fifteen fatal drainage cases the conditions were extreme and the drains in none of them could have accomplished much. In two of the cases perforations were overlooked; the operations were delayed in four; and in four others the deaths were due directly to hæmorrhage and shock; in one a divided ureter was undetected; another died from opium; and in one the "drain had not worked." The traumatisms in the other two cases were extensive and it would have been exceptional for either one of them to have recovered. Of the eight non-drainage cases two recovered and six died; of the two recoveries there were no wounds in the alimentary canal in one, and in the other, only one perforation of the small intestine. Of the six that died septic peritonitis caused death in five, and in the other there was profuse hæmorrhage from the renal artery. Had drainage been employed in these cases, I believe more of them would have lived, for if there is any one thing, next to irrigation, that can guard against septic infection, it certainly is the drainage tube.

In one of my patients I believe the omission of the drainage tube was directly responsible for death, and shall always feel that had I used drainage my patient would have recovered. The operation was, with that exception, the most satisfactory I ever did, it was done promptly and quickly; there was no shock before or after the operation; and the perforations were all found and demonstrated at *post mortem* to have been securely closed. Everything went along well until the peritonitis set in, and then death came rapidly, notwithstanding the wound was reopened, the cavity irrigated, and a drainage tube inserted.

In wounds of the intestines so extensive as to materially diminish the bowel lumen, should the Lembert suture be used, intestinal anastomosis promises better results than exsection of the wounded intestine. All of the eleven patients died where exsection was resorted to.

To reinforce a perforated or bruised intestine with omentum is of great importance. Fre-

quently around a perforation there is some bruised tissue, and this may slough if the perforation is simply sutured. In one of my cases I stitched the omentum over the perforation and bruised tissue, and my patient recovered.

The following are the causes of death in the seventy-four fatal cases: Septic peritonitis, 29; hæmorrhage, 15; delayed operations, 13; shock, 9; overlooked perforations, 3; and from other causes, 5. I believe the study of these fatalities, with the other facts presented, will make it apparent that the suggestions made, should be considered as established rules in the management of gunshot wounds of the abdomen. I hope in future that such causes of death will be eliminated as septic peritonitis, due to omissions of irrigation or drainage, delayed operations, shock from prolonged operations, and overlooked perforations.

From a careful analysis of 112 laparotomies for gunshot wounds of the abdomen, I feel warranted in drawing the following conclusions:

First. Gunshot wounds of the abdominal cavity should invariably be treated by laparotomy. With the operation the mortality is 66.27 per cent; without the operation more than ninety per cent. die.

Second. It will be safer to always open promptly and cleanse the peritoneal cavity, even should the viscera escape injury. Two patients died of septic peritonitis, without visceral wound, because this was not done; the six exploratory operations terminated favorably.

Third. Symptoms are unreliable, and the surgeon should never wait for them, if the ball has penetrated the cavity. This must always be ascertained, either by the use of an aseptic probe, or by enlarging the bullet wound and following its track through the abdominal wall. In delayed operations the mortality is eighty per cent.

Fourth. In every instance mentioned, where the operation has been greatly prolonged, the patient died. Shock from the anæsthesia and manipulation is always considerable, and all possible haste should be made.

Fifth. In extreme shock, rather than occupy too much time in suturing the perforations, adopt the open peritoneal treatment, and trust to irrigation and drains to save the patient. Nine deaths were due to shock.

Sixth. In destructive wounds of the intestines, lateral anastomosis promises better results than exsection. All of the eleven died where exsection was done.

Seventh. By utilizing omentum we can sometimes close destructive wounds, without diminishing the intestinal lumen too much, and can reinforce bruised intestinal tissue that would otherwise be dangerous to leave. In one of my successful cases the latter procedure was adopted.

Eighth. In liver wounds the hæmorrhage must

be controlled and the peritoneal cavity cleansed. In some cases it may be well to drain the liver wound separately, by inserting a glass tube, as suggested by Dr. M. Price. A fatal case of mine, with bile duct cut, might have recovered had I used the tube.

Ninth. The kidney must be removed if wounded and bleeding. This was done in the only successful case; and in the other four cases, all fatal, the kidney was removed in two and left in two.

Tenth. The hydrogen gas test is only of use in demonstrating the closure of all the perforations, and should be used just before closing the abdominal incision. Dr. Senn detected an overlooked perforation by this means and saved his patient.

Eleventh. Irrigation should always be copious and thorough, and never omitted when the digestive track is perforated. It is the best treatment we have for shock; diminishes the thirst that is so often annoying; and is the best means of guarding against septic peritonitis. Twenty-nine of the seventy-four deaths were due to this septic infection.

Twelfth. The drainage tube should rarely be left out. I have never known it to do harm, and certainly some of the recorded cases would have done better had the tubes been inserted. The omission of the drainage tube was the cause of death in one of my patients. In drainage cases the mortality was less than in non-drainage cases, notwithstanding the former were in a far more desperate condition at the time of operation than the latter.

FRACTURES OF THE BASE OF THE SKULL, AND THEIR TREATMENT.

Read by Title in the Section of Surgery and Anatomy, at the Fort-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY HAL C. WYMAN, M.S., M.D.,

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Benjamin Bell, of Edinburgh, writing about 100 years ago, said: "A great variety of symptoms are enumerated by authors as indicating a compressed state of the brain from external injuries, but the most frequent, as well as the most remarkable, are the following: giddiness, dimness of sight, stupefaction, loss of voluntary motion, vomiting, apoplectic stertor in the breathing, convulsive tremors in different muscles, a dilated state of the pupils even when the eyes are exposed to a clear light, paralysis of different parts, especially of the side of the body opposite to the injured part of the head, involuntary evacuation of the urine and fæces, an oppressed and in many cases an irregular pulse, and when the violence done to the head has been considerable, it is commonly attended with a discharge of blood from the

nose, eyes and ears. Some of the milder symptoms, such as vertigo, stupefaction, and a temporary loss of sensibility, are frequently induced by slight blows upon the head, and as they often appear to be more the consequence of a shock or concussion given to the brain, than of compression induced upon it, they commonly soon disappear, either by the influence of rest alone, or by other means to be hereafter pointed out."

I have quoted these lines from the great surgeon because they indicate so clearly the symptoms which may in whole or in part present in a case of fracture of the base of the skull, and also indicate the distinction to be made between the terms concussion and compression. I have often thought it was unfortunate that these terms must be used in defining the state of the brain after great violence has been done to it. Would it not be better to indicate the pathological condition in these respective consequences of violence to the head, and say, injury to the head with or without internal hæmorrhage. We could leave the term "compression" for use in those cases in which the symptoms so carefully enumerated by Bell have developed without a history of recent injury. Fractures of the base of the skull are so constantly fatal, that men of wide experience are loth to believe they ever terminate in any other way.

I have examined, post-mortem, thirty-four cases of fracture of the skull resulting in death, of which number twenty-six were fractures of the base of the skull. In the majority of them the hæmorrhage which caused death was poured into the space between the bone and the dura mater, and the middle meningeal artery was wounded. In the minority, the hæmorrhage poured into the substance of the brain from rupture of the vessels of the pia mater, or the cerebral arteries, and death was probably due to concussion and disturbance of brain cells. In many of the cases the patients lived several days after the injury was received, before the pressure of the clot on the brains had squeezed the vitality entirely out of them. I could not help contrasting these cases of fracture of the base with cases of fracture of the vault of the cranium, in which the hæmorrhage was poured out on the cerebral convexity. The majority of such cases recover, as is well known, when properly treated. It occurred to me that if we could devise some means by which we could abstract the clot from the base of the brain, precisely as we abstract it in cases of fracture affecting the cerebral convexity, we might cure many cases which now end in death. It is a well known fact that the majority of fractures involving the cerebral convexity will recover after trephining, while fractures of the base of the skull in almost every instance result fatally, and are very rarely trephined. This may be owing to the supposition that the fracture of the base of the skull involves

the pons, the medulla, and those parts of the brain more essential to life, and that death is due to such injuries rather than the presence of the clot. But since in almost all cases of death following fracture of the base of the skull, death results from pressure rather than from inflammation of the brain, I do not see why an operation which removes the clot and the pressure, would not be the right thing to perform. No doubt the operation has not been commonly performed, because of the great difficulty of reaching the basal portion of the brain, through the large muscles which cover it. After a little attention to the history of trephining, I find that the earlier operators used the trephine much more freely than we do nowadays. There is no difficulty in finding cases where they perforated the skull numbers of times, before finding the clot, and they did not seem to hesitate for fear the frequent use of the instrument that way was endangering the patient's chances of recovery. I find also that they boldly cut away the strong muscles which are attached to the occipital bone, the sphenoid, and the temporal, to bare the bone and trephine at the point where the clot could easily be removed. Now if we were to use the trephine with the same freedom with which it was formerly used, I think that our modern antiseptic methods would give us better results than the ancients obtained.

The treatment which we commonly apply to the fracture of the base of the skull is equivalent to doing nothing at all. Simply taking a little piece of cotton, dipping it in an antiseptic solution, and then stuffing the patient's ear with it, is about all that is usually done.

To distinguish the fracture of the base of the skull is not always easy. There are several signs which are likely to be of value. First and most important of these is the general fact that fully 80 per cent. of all fractures of the skull involve the base—this fact makes the danger of mistaken diagnosis very slight. Orbital ecchymosis, watery discharges from the ears and nose, or bloody discharges from the ears and nose, paralysis of the cranial nerves, are all signs which are sometimes present in cases of fracture involving the base of the skull.

The presence of orbital ecchymosis is significant as indicating the existence of a fracture through the anterior fossa of the base of the skull. While the presence of paralysis of the cranial nerves, the third nerve for example, is unmistakable evidence of the presence of a fracture of the middle fossa.

The escape of blood from the ears, or the escape of serous fluid, in my experience, has been comparatively rare, and is in my judgment one of the weakest of all the signs which are commonly supposed to have to do with a fracture of the base of the skull. Its absence is practically no evidence that a fracture of the base does not exist.

In any case in which the trephine is applied to the vault of the cranium and the elevation of a depressed fracture or the removal of a clot from the cerebral convexity does not improve the condition of the patient, I would trephine the base of the skull and expose the fossæ which have been fractured, and contained clots twenty-six times in the thirty-four autopsies which are the basis of this study.

I believe the most important point in the diagnosis of fracture of the base of the cranium, in cases admitting of treatment by the operation of trephining, is an interval of sense following an injury to the cranium. This sense interval cannot be emphasized too much. It appears in this way: A man meets with a fall, or receives a blow on the head. He is shocked, for a time unconscious, perhaps unable to say how the injury was received; he walks to his home, several blocks perhaps, and arriving there sinks into a chair, is faint, vomits perhaps, but speedily becomes unconscious; in this unconscious condition his muscles may tremble, he may be nervous or irritable, may be paralyzed upon one side or the other, his tongue may be protruded to the right or the left, his pupils may be contracted or dilated, it makes no difference; the important thing is the fact that after an interval of sense following a stunning blow the man again becomes unconscious, and sinks into a condition in which death is imminent, unless the clot is removed. The presence of paralysis, the size of the pupils, and the condition of the stomach, are of little or no value as diagnostic signs; the one important thing is to recognize the existence of an interval of sense, and it means simply that the violence has caused a rupture of a blood-vessel, that in consequence of the rupture of that vessel, a clot has formed between the dura mater and the bone, or within the membrane, and it is gradually squeezing the vitality out of the patient, and will continue to do so until it is removed. Now, one of the great difficulties that we have to deal with in these fractures of the base of the skull is the removal of the clot of blood which adheres so firmly to the membranes that, notwithstanding our opening is an inch or more in diameter, the clot will not readily flow away. It must be entirely removed in order to do the patient the greatest possible good. It will be necessary, in many of the cases, to make more than one opening; at least, to make a second opening, removed a short distance from the first. Then a scoop must be used because of the adhesion of the clot.

I have seen numbers of cases in which the patients have not been improved by the trephine, while the autopsy showed the presence of a clot too large to be removed through the opening made by the trephine, and the firm adhesion of the clot to the membrane showed the need of a scoop for the purpose of facilitating its removal. Such an

instrument I have made out of a watch spring, and found it very efficient. The temper is taken from a piece of watch spring about 6 inches long by holding it a moment in a gas jet, then it is folded on itself, making a loop about $\frac{1}{2}$ inch in diameter. The shaft of the instrument can be bent in any direction, so that it can be passed through the opening made by the trephine, and the anterior, middle and occipital fossæ of the base of the skull be thoroughly scooped for clots.

The great point in all of these cases, the 80 per cent. of all cases of fracture of the skull, is to find the location of the clot, since death in the majority of instances results from the pressure of the clot of blood upon the base of the brain. Now, owing to the fact that eighteen out of the thirty-four cases which came under my observation presented a clot, the result of a rupture of the middle meningeal artery, the great majority of all the cases would be properly reached, the clot properly scooped away, providing the trephine was applied at a point where the middle meningeal artery could be easily reached. Such a point is found immediately above the zygomatic arch on the affected side. To apply the trephine at such a point requires an extensive section of the scalp, and a dissection of the temporal muscle, with ligation sometimes of the temporal artery. It is dangerous also to certain branches of the seventh pair of nerves, although I have never been so unfortunate, notwithstanding I have made the operation a number of times, as to divide the facial nerve and blemish the patient. The gravity of the case, however, which makes an operative procedure necessary, is sufficient to justify the risk of wounding nerves which might impair the facial expression.

If palpebral ecchymosis, and the character of the violence, point to the presence of the clot in the anterior fossa, trephine just above the superciliary ridge, on each side if need be, introduce the scoop and clean out the fossa.

If the clot is localized in the occipital fossa, divest the trapezius muscle from its attachment to the occipital bone, apply the trephine and use the scoop. The skull and scoop which I now exhibit to you are intended to illustrate the fact that the trephine alone cannot always compass these cases, and that it has a convenient and powerful ally in a properly tempered scoop which may be pushed between the dura and the bone in any part of the cranium with great ease, and between the membranes when delicately manipulated; without danger of raking away the cerebral substance which has been uninjured by the violence. In cases of gunshot fracture the greatest caution must be exercised in using it, or the brain substance, more friable than the usual clot, will be needlessly sacrificed.

I might summarize my views of fracture of the base of the skull in this way: Trephine all cases

which have had a sense interval; trephine the basal portions of the skull; trephine until the clot has been entirely removed with a properly constructed scoop.

GUNSHOT WOUND OF BRAIN; RECOVERY WITH BALL REMAINING THEREIN.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY J. LEE MCCOMAS, M.D.,
OF OAKLAND, MD.

As the profession is interested in the localization of lesions of the brain, and this case being one of an unusual type, I present it for your consideration, it being an accurate record, carefully noted while in constant attention at the bedside.

William C., æt. 16, right-handed, was accidentally shot September 29, 1889, at 2 P. M., by a companion, who was above him on the mountain side when the gun went off.

The cartridge is known as 22 short, and contains 3 grs. of powder; weight of ball, 28 grs., and conical. The ball entered a little below the internal end of the right arcus superciliaris about the attachment of the corrugator supercillii, passing through the frontal sinus downward and backward to the left, as indicated by the probe. Considerable hæmorrhage at the time he was wounded, and he kicked and threw himself about very much. Was carried home in an unconscious condition.

I was called to see him at 5:20 P. M. Found him lying on his back on a lounge, head elevated. Probe in wound $2\frac{1}{2}$ inches; brain protruding, and bleeding slowly; pupils dilated and insensible. The boy was still unconscious; vomiting at intervals, and blood in right nostril. T. $97\frac{3}{4}^{\circ}$, P. 52, R. 22. Pulse irregular and extremities cold. On gently touching the probe from side to side it dropped in track of ball; one inch deeper to left side I could feel no ball. I turned him on his right side, lowered his head, disinfected and cleaned wound, removed protruding brain when the coagulum came out, followed by a little flow of blood. I could find no spicula of bone, but probe passed freely in frontal sinus. I then applied iodoform gauze over wound. At 5:35 P. M. I gave him hypodermic of 3 j fl. ext. ergot and an enema of am. carb. and fl. ext. ergot; repeated it at 8:15 P. M. At 8:26 P. M. pupils responded. Testes drawn up close to abdominal ring. At 8:30, T. 98° , P. 63 and irregular; vomited, mucus rattling in throat, grinding his teeth; 11:38 P. M., has vomited about every hour and a half since 8:30 P. M.; P. 54, R. 22; surface very cold. Ordered carbonate of ammonia every two hours as an enema, and applied hot water bottles.

Sept. 30, 8:15 A. M.—Laid quiet all night, but

not in deep coma; T. $98\frac{3}{4}^{\circ}$, P. 60, R. 20. 2:23 P. M., comatose; T. 98° ; passed urine in bed; did not realize it. Lips greatly swollen and purple, wound dry; lies with knees drawn up and hands clasped between thighs. 7:30 P. M., bowels and urine passed in bed, but was very restless previous; put clean shirt on him, and the effort aroused him a little. 11 P. M., P. 52, comatose and skin cold. Gave 3 drachms whisky and 20 grs. carb. am.; later an enema of bovinine. Lies quietly, no muscular twitching; arteries of head and neck very prominent and visibly pulsating.

Oct. 1.—T. 98° , R. 18, deep and slow. Fearing inflammatory symptoms, I cut his hair off close without disturbing him. He turned his head from side to side on the pillow, scratching it at intervals through the morning.



Oct. 2, 8:25 A. M.—Quiet night; T. $98\frac{3}{4}^{\circ}$, P. 60, R. 16; tears flow from both eyes; yawns frequently; is restless; rubs palms of his hands together; grinding teeth; the mucus in his throat troubles him very much; coughs and swallows with difficulty; had slight bronchitis a few days before accident. 10:55 A. M., lying more quiet; hands clasped over abdomen. I asked him if he wanted to urinate; he placed his hands on his penis, nodded "yes," and did so. Breath very offensive; became very chilly, shivering, skin very cold. Gave an enema of whisky, $\frac{1}{2}$ oz., with bovinine, 1 $\frac{3}{4}$, and he became more comfortable; I repeated it in half an hour. 4:35 P. M., opened his eyes, gazed at me with a confused stare; ptosis of left eye complete; right eyelid almost swollen shut; threw his head back to look at me; T. $99\frac{1}{2}^{\circ}$, P. 70, R. 21. 8:30 P. M., temperature being the same, I gave 10 grs. calomel, bowels being torpid.

NOTE.—The squint of right eye as seen in the engraving is of secondary deviation, caused by improper direction of the point of vision by the photographer. I was not present when the picture was taken.

Oct. 3, 10:50 A. M.—T. $98\frac{1}{2}^{\circ}$, P. 63, R. 18; rested well all night; is more conscious; sat up and drank soup and bovine; hands and arms very cold; right eyelid still swollen, and the wound very much tumefied; abdomen sunken; at a request buttoned his shirt at the neck; caressed baby sister; answered "yes" and "no" to questions by shake of the head. 1:45 P. M., gave an enema of carbonate of ammonia and per orem, 7 grs. each of calomel and jallap, as his bowels were still torpid; indicated his taste by a wry face; asked him if it was good; shook his head "no;" drank beef-tea and swallowed better; aphasia complete; frontal veins very large, no other to be seen; arteries of head very prominent. At 2 P. M. passed urine in urinal, at request; swallowed better. 4:45 P. M., repeated the calomel and jallap. 8 P. M., became very restless, passing wind; finally bowels acted in bed, and he appeared to realize what he did. This depressed him very much, and I gave him 2 drachms of whisky and bovine per orem. Slept till 10 P. M., when he became restless, and bed pan being placed he had an action of the bowels and urinated, then relapsed into an apparent sleep.

Oct. 4, 6 A. M.—Woke up and washed his hands and face; gave him a glass of whisky and water; took it in his left hand and drank it. Asked him if he wanted breakfast; said "yes," first word spoken since he was shot. Gave him 6 ozs. of beef soup, milk and bovine; then he requested a "*wink o' waha*" (for drink of water); took glass in both hands and drank. At 9:15, with great difficulty in articulation, made same request. Asking him if he understood all said to him, said "yes" plainly, at same time nodding his head. Evidently he understands what we say, as he smiles at a joke, but seems disposed to sleep. Right eye closed and lids stuck together; resists the washing of his eye, and it irritates him very much; wound dry and crusted over; all veins of head visible; when let alone, relapses into a sleepy condition; takes long and deep inspirations, but expires slowly; for "not now" says "*naw naw*;" lips and wound less swollen; arterial tension less; is very restless; turns from side to side; says "*bows hur mae*" for bowels hurt me; peristaltic action and passing wind. 10:30 A. M., expressed a desire to pass water, did so, and then drank a glass of milk; clasps his hands and revolves one thumb over the other; works great toe of right foot; T. 98° , P. 61, R. 16; surface cold; called for "*sanin goo tu eat*," "what would you like?" he replied, "*stu oyster*;" gave soup and bovine; testes down in scrotum for first time since injury; on irritation of genito-crural, they respond promptly; tested his sense of smell; put tincture of camphor to his nose; said it was "*sine kine camper*," articulates no better. 3 P. M., gave carbonate of ammonia enema and shaved his head; bowels acted and urinated; he

asked for "*ba pan*;" action depressed him, and I gave $\frac{1}{2}$ oz. of whisky. 8:35 P. M., T. 98° , P. 60, R. 18; lies as if sleeping; skin very cold; rouses up if spoken to, and answers intelligently, though not distinctly, and becomes greatly excited when we do not understand him; sighs often and turns in bed.

Oct. 5, 10:20 A. M.—T. $98\frac{1}{2}^{\circ}$, P. 59, R. 15; passed a quiet night; very irritable; flies cause him to swear fearfully, but not distinctly; raves if requested to repeat; when let alone, relapses into a quiet condition with closed eyes, but if a fly alights on him he becomes excited. During the night called for milk and water frequently; is quite rational; arteries not to be seen, and veins not so full. 10:35 A. M., gave a drink of whisky (3 ij) and water; asked him what it was, said "*whisty and waha*;" right eyelids stuck together, but less swollen; pupils respond promptly. I told his mother to make a cap for his head to keep the flies off; half an hour afterwards he called for it, and became angry because it was not ready. Requested to raise the window curtain to get more light. 1:40 P. M., T. $98\frac{1}{2}^{\circ}$, P. 55. 2:40 P. M., T. 99° , P. 60, R. 16; ears very red; asked for "*wink o' waha*;" sat up and drank perfectly; tries to talk; cries and gets very angry and swears because we cannot understand him; puts tongue out well, very slightly inclined to right side. 6:40 P. M., T. $98\frac{1}{2}^{\circ}$, P. 51, R. 17; seems sleepy but easily aroused; smiled and recognized a friend and called him by name.

Oct. 6, 12:20 A. M.—I was sent for in great haste; found his P. 50, T. $98\frac{1}{2}^{\circ}$, R. 15; very weak and breathing hardly perceptible. Gave him 2 drachms of whisky and water per orem, and $\frac{1}{2}$ oz. of whisky and 10 grs. of carbonate of ammonia as enema in half hour thereafter. 1:10 A. M., P. 56; called for chamber and bowels acted; as this depressed him, I gave $\frac{1}{2}$ oz. of whisky and milk; heart's action jerky and labored on inspiration. 2:45 A. M., P. 60, sleeping and breathing regularly; quiet till 6 A. M., then became restless. 11 A. M., T. 98° , P. 53; wound dry and crusted, like vaccination; tries to talk, but articulates badly; realizes it and frets; for "can't you understand?" says "*can you no unerstan?*" for "what time is it?" says "*can wa time is it?*" for "give" he says "*ginn*;" he asks, "*when goin have binna?*" for "when are you going to have dinner?" Became irritated and began swearing at a terrific rate at the flies. I find his *sense of smell and taste perfect*. When requested to repeat anything wrongly spoken, does it often correctly. 3:25 P. M., T. $98\frac{1}{2}^{\circ}$, P. 56, R. 18; calls comb "*kame*;" when told it was "comb" said, "yes, I meant comb;" named clock and scissors correctly; read large print, *Maryland Journal*, though with difficult pronunciation; takes interest in my actions in his room, and obeys my requests; inspirations deep and pause before each expiration; pulse

more regular; on percussing his head, said "*tain no use tapin, fine no pain or tender*;" calls flies "*shies*," and for mash says "*shash*;" hummed the tune "Days of Days Absence" correctly. 6 P.M., ate soft boiled egg; two hours after became very unruly, swearing and kicking if disturbed; urinated four times between 12:25 A.M. and 10 P.M.; urine milky when first passed, on standing became pale red; heavy light-colored deposit; specific gravity, 10.30; full of leucin and uric acid and amorphous urates; quantity normal; reaction very acid.

Oct. 7, 11 A.M.—T. 98½°, P. 58; mind clear; asked for tobacco, but spit it out, said it was nasty and too strong; has very little saliva; said "*set the bore*" for shut the door; looked out and said, "*jimany cooky, I din know it was snowin*," seldom sounds the "r," says "*wope*" for rope; vision is correct; complains of left eye hurting; right eye open and clear; oedema all gone; right eye very sensitive; ptosis still continues. 7 P.M., very excitable and cross, grinds his teeth and cries; picked scab off of wound and tries to rub it; soft parts around it very much elevated and hard, depressed in centre; relapsed into a sleep; holds his breath, then takes long and deep inspirations, then expires slowly; took tapioca and cream, soft egg and oyster soup for dinner; some time afterwards became restless and threw himself about; swears correctly, but cannot say what he wishes in other things, which excites him; gave calomel and jalap every three hours. 9:30 P.M., sleeping. During the evening his father told him I did not like it because he swore so; said he was sorry, but could not help it and did not mean to do so.

Oct. 8.—Rested fairly well all night; wants to dress and sit up; says "*als wata gona do too*;" T. 98, P. 60 and irregular; said "*pa at slaves agehen too hot*" for "that stove is getting too hot;" he asked how he got shot; asking him how he knew he was shot, said someone said so; "*how lon I bin sit?*" we told him ten days, and he was surprised; *angle of right upper lip elevated and the left lower depressed, and lips everted and teeth show* when he tries to talk. Got up at 11 A.M. and sat in the chair; walks well, ptosis improved, slight convergence of left eye.

Oct. 9.—T. 98½°, P. 58; passed a good night, bowels acted, is very hungry, less irritability of temper; rubs his left eye, says it feels like hair was in it; closes it to look at anything, but says he does not see double; took egg custard, milk, bovine and potatoes to-day. 8 P.M., is very restless and frets, but says he has no pain, but I think eggs in any form disagree with him.

Oct. 10, A.M.—Had restless night till bowels acted; still grinds his teeth when sleeping; says something is wrong in his head; it is not a pain, but does not know what it is; attempts to sit in a chair, walked back to his bed in a few minutes, said it was too much; wound dry.

Oct. 11, A.M.—Rested well all night; tore scab off of wound, a little healthy pus weeping out; I can feel no bone; the probe irritates him, as the wound is very sensitive; played a game of cards to-day and beat his father in the game.

Oct. 12 and 13.—No special change in condition.

Oct. 14.—Won four out of seven games of "seven up;" will not obey my request to keep quiet.

Oct. 15.—Complains of headache; no rise of temperature; otherwise seems well.

Oct. 16.—Wound patulous, depressed in centre, discharging considerable greenish pus of a ropery, tenacious character; fungus granulations like necrosis, but no bone to be felt.

Oct. 17.—Sleeps well, eating well; wound still discharging, but less in quantity. I tested his power of writing, calling for the alphabet, but he would make a "b" for every letter; saw his error after his attention was called to it, but could not correct it. I saw him no more until Nov. 1, when he was out and apparently well, the wound discharging, a little hard elevated tissue around it, depression in the centre.

Dec. 1.—Was sent for and found him in violent excitement from drinking, no one could control him, would listen to no reasoning. I gave him morphia and bromide, and finally he went to sleep, and the next day we could discover no injurious effects from the spree.

From investigations made upon a skull about the same measure as this boy's I am led to believe that the ball passed through the right frontal sinus, entering the first frontal convolution posteriorly to the cristagalli, passing downward and backward above and over the olfactory and optic nerves at the optic foramen to the inferior frontal convolution, or Broca's speech centre, and from all indications lies internal to the anterior clinoid process at or near the fissure of Sylvius. "Cortical disease of those frontal gyri which lie anteriorly to the motor centres is often attended with no marked symptoms of a diagnostic character. The higher mental faculties may occasionally give signs of more or less impairment. Connected thought, the control of the emotions, accurate reasoning and concentration of the attention are particularly difficult under such circumstances."¹ To sustain this theory we have in this particular case listless condition, unusual profanity, the flow of tears, crying and mental depression.

That Broca's speech centre and the isle of Riel are involved is indicated by the aphasia, as he understood everything said to him, made efforts to reply, but could not regulate his speech movements, and was painfully conscious of his defects, as expressed by crying and becoming angry if we asked questions or requested him to repeat. We also have *paraphasia*, for when he could speak he uttered such sentences as "*can wa time is it?*"

¹ Ranney.

and "can you no unstan?" "kame" for comb. Then he could not write the alphabet, making "b" for every letter called for, and realized his error if attention was called to it.

Adjacent to Broca's convolution we have located that part of the brain that governs retraction and elevation of the opposite angle of the mouth and elevation of the *ala nasi* and upper lip, with depression of the lower lip on the opposite side.² The important points are, what portion of the objective symptoms depend upon the presence of the ball, and what from extravasated blood? The ptosis, strabismus, dysphagia and asphagia are of the past. That those symptoms were produced by extravasation and absorbed, looks reasonable.

If the ball had penetrated farther back, it would have entered the first superior temporal lobe, and "we would have loss of, or impairment of, the sense of taste or smell (if destructive in character), or subjective odors or tastes (if irritative in character);"³ but he tasted his medicine and recognized tinc. camph. If it had gone more to the right, it would have injured the optic nerve or internal carotid. *Where is the ball?*

His family moved away some fifty miles, and I went to see him May 5. They tell me they can see no change in him, only he is more irritable and quarrelsome. Is following the painter's trade and works at great heights, and says he feels steady while on the scaffold. I notice his mouth very slightly draws to the right when talking; his tongue also inclines a very little to the right; eyes act normally and sight perfect; he can read and write.

THE TREATMENT OF FLAT FOOT BY THOMAS' METHOD.

Read in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

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To the frequent occurrence and annoying symptoms of flat foot, we no doubt owe the large number of methods of treatment: we may choose between the braces of Whitman, Roberts, Woodbury, Sayre and others; the traction shoe of Shaffer and other mechanical appliances for forcibly twisting the distorted foot into position; the operation of Ogston and those who have modified his procedure; the supramalleolar osteotomy of Trendelenberg; tenotomies of different muscles; the treatment by means of pads of various materials placed under the arch of the foot; the use of suitable foot and toe exercises; the employment of artificial muscles to hold up the flattened foot; and

the method of Hugh Owen Thomas, of Liverpool.

This list is probably not complete, but it is certainly varied enough to suit all men and all cases.

It is not my purpose in this paper to criticise or compare these methods one with another, but simply to give the results of my experience with one line of treatment and to try and show in what class of cases it has been successful, and also in what cases, in our opinion, it fails, and, consequently, should not be used.

The report is based upon a study of over fifty cases of flat foot seen at the Out-Patient Department of the Hospital for the Relief of the Ruptured and Crippled, New York, during the past two years, which were treated by this method. The histories of twenty-five of these cases which have recently been examined are given in a table appended to this paper.

The plan of treatment of Mr. Thomas was derived from "clinical observation," and a picture of a flat foot sole is given in his work on "Diseases of Hip, Knee and Ankle Joints," published in 1886. The method consists in raising the inner side of the sole of the shoe a sufficient amount to cause the patient to walk in "varus" or on the outer side of the foot. The inner side of the foot is thus raised, the arch relieved somewhat of the downward pressure of the weight of the body, which is to a certain extent transferred to the ground through the cuboid rather than the scaphoid bone. This increase in height on the sole of the shoe extends from the extreme back portion of heel to just back of the great toe, and slopes gradually from the inner to the outer side.

In the manner in which the shoemaker does his work and on the fit of the shoe depend much of the success of the treatment. The shoe should fit properly and snugly, or the foot will simply turn inside it and not be "rolled over" to the outer side. The raised portion should not extend beyond the proximal end of great toe, as it is desirable that the toes should rest on the ground. The shank should be firmly supported, as it is here that the pressure comes, and it is often desirable in fixing "ready made" shoes where this part is particularly weak, to have it reinforced. These objects are best accomplished in a well fitting laced shoe of the Waukenphast type. Care must be taken that, if there are bunions or corns on the outer side of foot, they are not pressed upon in walking or standing, as is very apt to occur when the inner side of the foot is raised. As soon as the raised portion begins to wear off, it should be replaced, and, in our experience, we find that a "building up" of $\frac{1}{4}$ to $\frac{1}{2}$ inch is the proper amount. The patient should be taught to walk straight; that is, with toes pointed in front of him or nearly so, and not with feet widely separated and toes pointed outwards, for by that act alone, the deformity is increased and the trouble aggravated.

² These symptoms existed in this case as above stated.

³ Ranney.

Before stating in what class of cases Thomas' method best succeeds, and in what class it fails, I think it well to briefly give the symptoms of flat foot, and will take the liberty of quoting from a recent article of Dr. Whitman, read at the New York Academy of Medicine, Section of Orthopædic Surgery, in March, 1890. He says the diagnosis of flat foot is made from the following symptoms:

"1. Pain in the feet, aggravated by standing or walking, especially on going up or down stairs. The pain is usually about the arch, sometimes running up the leg, or it may be below the external malleolus at the ball of the foot or heel. 2. Stiffness and weakness of the feet, these symptoms combined with an inelastic gait, with toes turned out, some congestion about medio-tarsal joint, a moderate prominence below and in front of the internal malleolus, with pain at this point on suddenly moving or twisting the fore foot, also a considerable flattening of the arch when weight is borne. In well marked cases the deformity is so apparent that any one who has ever heard of flat foot should be able to make the diagnosis at a glance. Here the os calcis is tipped over to the inside, the astragalus has rotated and slipped downwards and inwards, forming the well marked projection at the inside of the foot, the arch has disappeared and the fore foot is so displaced outwards as to become a useless appendage. In such cases we find to a varying degree the spasm of muscles, congestion and inflammation of the soft parts often so marked as to be mistaken for 'carries of the tarsus.'"

From this short but complete account, we see that there may be many degrees of severity of flat foot, and for convenience we may divide them into three classes. In the first class, the mildest cases, the symptoms are a slight sinking of the normal arch, occasional pain, fatigue in walking or standing. These cases rarely consult the surgeon unless the pain becomes too annoying, and by use of medicines, slight rest and liniments they fail to get relief.

In the second class of cases the deformity is well marked, the pain more or less severe and constant, and slight spasm is present. The spasm may be easily overcome and may not be present at all times. This combination of symptoms represents the class of cases most often seen.

The third class comprises all the more severe cases, the acute or inflammatory flat foot, what König and Lorenz describe as "contractured static flat foot;" also the cases secondary to traumatism, especially Pott's fracture. In these patients the spasm is a marked symptom, the pain is severe, displacements of astragalus, scaphoid and os calcis exist, and change in the muscles, ligaments and tendons.

In cases of a mild type the treatment gave relief, and it was prompt and permanent while the

treatment was continued. In some, after treatment had been stopped a certain length of time, a relapse occurred; this, as in the former instance, was promptly relieved by the same treatment. In the more severe cases, but not in the severest, in most instances the treatment was also successful; in cases with slight spasm, that symptom soon disappeared and the foot became supple and at the same time less painful, the flattened arch became more natural, and the symptoms were more or less completely relieved. In the worst cases the treatment failed, and I think the reason is, that to tilt the foot to the outer side presupposes some mobility in tarsal joints as well as in ankle, and where they are held in marked spasm such can not occur. Again, if the foot is very tender and painful it will not stand any pressure long continued, and such cases can only be successfully treated by complete rest, preferably in a plaster of Paris splint or some immovable dressing, after the foot has been forcibly twisted into shape by manual force, or by a Thomas twister or other device, patient being under the influence of an anæsthetic. Here the dislocations must be reduced, adhesions broken up, and foot forcibly placed and held in a correct position. In treating all cases, constitutional symptoms should not be disregarded; gouty and rheumatic cases must receive suitable medicine, the weak need tonics, those using the feet too much need rest, ill-fitting shoes must be cast aside, ingrowing toe-nails, corns and bunions receive proper care, feet be properly looked after, and such exercises be carried out as raising the body on the toes a number of times each day, practicing adduction and abduction of the forepart of the foot, and such other movements as will strengthen and develop weakened muscles and ligaments, aided also by massage and douches of hot or cold water.

In cases of severe spasm and deformity, after these have been overcome, much good may be done and relapses prevented by then raising the inner side of shoe, thus supporting the foot. The advantages of this form of treatment are:

1. Simplicity.
2. Success in proper cases.
3. Cheapness.

Any intelligent cobbler can at short notice and slight expense "build up" a pair of shoes, whilst to make a proper brace means taking a good plaster cast in the correct position of foot, and more or less skill on the part of the instrument maker in properly fitting and constructing the brace, and its intelligent application by the surgeon and patient.

Thomas' method is well worthy of trial, and especially by those who have not the facilities for making the various braces. If it fails to give the desired relief, the surgeon then has the choice of any of the other methods previously alluded to; and certainly, in the treatment of all diseased

conditions, the simplest methods should first be tried, unless good and sufficient reasons exist for not using them.

In the following table the results of treatment are given as "improved" and "not improved." These terms are used rather than the term "cured," as in no case with a marked deformity at the start have we seen it completely disappear. The pain and spasm may have vanished and the patient be perfectly comfortable and to all intents and purposes cured completely, yet, on comparing the two feet, if one only was originally affected, it was invariably found to be flatter than the other, though in many instances not as flat as when treatment was begun. If both feet were affected, they were found to be flatter than the normal feet should be.

No.	Sex.	Foot Affected.	Age.	Class.	Duration before Treatment	Duration of Treatment	Time since Treatment	Result.
1	F.	Both.	17	2	3 mos.	2 mos.	1 year. [ment.	Imp.
2	F.	"	19	2	4 yrs.	6 mos.	Still under treat-	Imp.
3	F.	"	15	2	8 mos.	2 mos.	18 months.	Not imp.
4	F.	"	14	1	1 yr.	8 mos.	1 year.	Imp.
5	M.	"	26	1	3 mos.	8 mos.	1 year. [ment.	Imp.
6	M.	"	18	1	1 yr.	6 mos.	Still under treat-	Imp.
7	M.	"	23	2	1 yr.	1 yr.	" "	Imp.
8	M.	"	23	2	4 wks.	1 yr.	1 year.	Imp.
9	M.	"	21	2	1 yr.	1 yr.	1 year. [ment.	Imp.
10	F.	"	13	2	6 mos.	1 yr.	Still under treat-	Imp.
11	F.	"	44	3	1 yr.	2 mos.	4 months.	Not imp.
12	F.	"	17	2	3 yrs.	4 mos.	6 months. [ment.	Imp.
13	M.	"	16	2	1 yr.	1 yr.	Still under treat-	Imp.
14	M.	L.	34	3	1 yr.	2 wks.	1 year.	Not imp.
15	F.	Both.	40	3	3 yrs.	4 mos.	1 year.	Not imp.
16	M.	"	16	2	2 yrs.	6 mos.	6 months.	Not imp.
17	M.	"	19	3	3 yrs.	6 mos.	6 months. [ment.	Imp.
18	M.	"	45	2	1 yr.	1 yr.	Still under treat-	Imp.
19	M.	"	8	1	1 yr.	1 yr.	" "	Imp.
20	F.	"	7	3	2 yrs.	2 mos.	1 year. [ment.	Not imp.
21	M.	"	11	1	2 yrs.	1 yr.	Still under treat-	Imp.
22	M.	"	35	2	2 yrs.	1 yr.	" "	Imp.
23	M.	R.	48	2	1 yr.	3 mos.	6 months. [ment.	Imp.
24	M.	L.	33	2	2 yrs.	1 yr.	Still under treat-	Imp.
25	F.	Both.	19	2	2 yrs.	2 yrs.	1 month.	Not imp.

THE INFLUENCE OF LOW TEMPERATURE ON THE SYMBIOSIS OF MICRO-ORGANISMS WITH REFERENCE TO PNEUMONIA.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 21, 1890.

BY J. J. KINYOUN, M.D.,

ASSISTANT SURGEON U. S. MARINE-HOSPITAL SERVICE.

It is a well established fact in bacteriology that a certain temperature range is requisite for the propagation of microorganisms, some of which may have a wide range of temperature, while others require a more limited degree, which can not be departed from without jeopardizing the life of the microorganism. The same may be said in a general way concerning their resistance to high temperature; some are killed at 50° C., while others live for a considerable time at a temperature over 100° C.

The bacteria, which are widely distributed, sel-

dom exist alone, being usually associated with others, which constitutes the state of symbiosis. In this condition the bacteria exist and exert peculiar influence upon each other as to their manner of growth and individual virulency. A good example can be given showing the dependence upon each other of the different varieties of bacteria found in common garden earth, where the several kinds of aerobic and anaerobic germs exist, live and propagate in free oxygen, but if separated from each other the anaerobes cannot be grown except in an atmosphere devoid of oxygen.

In reference to the pneumococcus, the organism which we consider the specific agent in the production of lobar pneumonia, certain peculiarities have been observed in its life history which are deemed worthy to record.

The majority of those who have written concerning this microorganism appear to have given as its habitat the buccal cavity, where it will exist indefinitely. The medium of contagion is unquestionably the salivary secretion and the sputum from those suffering with pneumonia. The statement in reference to its presence in the saliva of persons, as given by some, fixes the percentage entirely too high, and it needs to be criticised.

All observations, so far, have been made upon cases not pneumonic in hospital wards where cases of pneumonia either had been or were at the time under treatment. We will assert that under these conditions a much larger percentage of persons will be found to have the pneumococcus present in their saliva, than of those in the ordinary walks of life. It is, we think, safe to say that we have every reason to believe that cases of pneumonia have been contracted in hospital wards from other cases; this fact alone can be sustained by the observations of many clinicians.

The *materies morbi* of pneumonia requires as much, if not more care in its disinfection than does tuberculosis, for the majority of cases have violent delirium at some time during the attack, thereby rendering it extremely difficult to completely disinfect their sputa.

Thus, it will readily be seen that if such conditions exist in a room, or hospital ward, the pneumococcus can be diffused and find a nidus within the buccal cavity of a large number.

The investigations which we have made in this direction have shown the pneumococcus to exist in much greater numbers among hospital patients than in others, for the solution of which the above possibility is offered. The life history of the pneumococcus is quite well established. Studied experimentally, it grows best in the ordinary nutrient media, viz.: agar gelatin and bouillon between 35° and 38° C., with the peculiarity of ceasing to grow in about four days, and dying if not transplanted to fresh nutrient media

within that time. The inhibitory and germicidal agent is the ptomaine produced by the organism, rendering the media sterile. In the culture of the pneumococcus we simulate the conditions that are present in the buccal cavity. There the ptomaine, as fast as formed, is removed, either by absorption or by solution in the saliva, there being always the requisite amount of heat, moisture and nutrition present. At ordinary temperature it lives about three weeks; during the first week it grows to a slight extent, then remains stationary until it ceases to exist.

Granting that the medium of contagion is the saliva, we find that within this fluid quite a number of other bacteria are constantly present, usually non-pathogenic, which undoubtedly exert some influence upon the growth and virulence of the pneumococcus.

Experimentally it can be demonstrated that the microorganisms found in the mouth in conjunction with the pneumococcus do exert quite a controlling influence upon its development; for, if they are planted together in nutrient media, these being kept at blood temperature and transplanted every day upon fresh soil, within a few days the pneumococcus will have disappeared; occasionally some one or two of the other varieties will have disappeared also, or will have been materially diminished. This was found to be the general rule, but exceptions can be cited. Sometimes the pneumococcus preponderates over the other forms, and gains the supremacy. When the microorganism associated with others is kept at ordinary temperature, there is the same general result, although a longer time is required to bring it about. When the pneumococcus is grown with several bacteria non-pathogenic, and susceptible animals inoculated with this culture, it was demonstrated that the animals did not succumb, as in the control cases, although the same quantity of each had been taken for the inoculations. These animals, chiefly rabbits, which were inoculated with the mixed culture, were, after recovery, inoculated with a pure culture and found susceptible to the disease. This explains the reason why it has been noted that when an animal susceptible to the disease is inoculated with a portion of a pneumonic lung, it often shows no effect, although the microorganism can be isolated from the lung. The bacteria present in the lung post mortem exerts an inhibitory effect upon the pneumococcus, rendering it innocuous.

We now come to the question of low temperature upon the microorganism, and in this connection some of the experiments conducted on this point will be given.

Bouillon cultures of the pneumococcus were made and then inoculated with the following microorganisms: *Bacillus Coli Commune*, *Bacillus Proteus Vulgaris*, *Bacillus Indicus*, saprophytic bacilli from the mouth, *Spirillum* of Fink-

ler-Prior, *Spirillum Denkeri*, and orange sarcina. These were placed in a thermostat and kept at a temperature of 37° C. for fifteen hours; they were then frozen solid and examined from day to day. At the end of five days there was quite a diminution in the number of bacilli and spirilla, save that of *Coli Commune*; there was no diminution of the pneumococcus. At the expiration of ten days the *Proteus Vulgaris* had entirely disappeared, leaving an active culture of the pneumococcus. The bacilli had diminished considerably in numbers, but none others had disappeared entirely. The number of spirilla in each culture had notably diminished. The sarcina had also disappeared. This series was carried on for forty days, during thirty of which the cultures were active; after that they began to decline, and in the succeeding ten days the pneumococci disappeared. Portions of lung tissue, six hours post mortem, were removed with the ordinary precaution and placed in large sterilized test tubes; some of these were sealed, others left open. One set was kept at a temperature of 37° C., another at ordinary degree, and still another was frozen. The lung contained bacilli, two varieties, a large micrococcus, and the diplococcus pneumoniae. In those subjected to 37°, both sealed and open, the pneumococcus had disappeared at the end of seven days; the second, kept at ordinary temperature, were found to have lost their pneumococcus at the end of the sixteenth day; those which were frozen presented the same general outline in their behavior as in the experiments conducted in the symbiosis of microorganisms. There was a gradual diminution in the number of bacilli until the sixteenth day, when the number remained about stationary. Meanwhile the pneumococci appeared about the same until the thirtieth day, when there was a diminution of all the varieties of bacteria, and the pneumococcus could not be grown.

Sputa of patients suffering from pneumonia was treated in the same manner, exposing it to temperatures of 37°, ordinary, and freezing. Its behavior was found to be in all respects similar to the lung, only the virulence of the pneumoniae was of slightly longer duration.

The occurrence of epidemics of pneumonia during the winter and spring months appears explainable in part by the foregoing experiments. The questions of individual susceptibility, predisposing influences of climate, and bad hygiene, are not to be overlooked in pneumonia any more than in tuberculosis; but it appears that, aside from these, there must be another factor to account for the epidemic form of the disease.

Variations of climate, associated with overcrowded living-rooms, when the microorganism is present in the sputum of an individual, certainly affords far greater chance of infection than if these conditions did not exist.

In the latitude where epidemics occur, during winter and spring months, there is a wide variation both in temperature and humidity, which is sufficient to lessen, if not destroy, other bacteria which exert an inhibition of the growth and modification of its virulence, so that the infective properties are increased. Pneumonia is distinctly a house disease. During the winter months the aggregation of people in homes, schools and factories is greatly increased. Aside from the necessary amount of artificial heat for personal comfort, the air is contaminated by respiratory excreta, the individual resistance lowered, and if the pneumococcus be present there is a fruitful field for the infective agent.

The conclusions we would draw from our observations are: That lobar pneumonia depends upon a special microorganism for its production; that its infective properties depend upon certain conditions and environments; its prevalence during winter months is due to the fact that the bacteria of pneumonia have greater resistance to cold than many other forms; that conditions are more favorable for the spread of infection by reason of the predisposing influences of climate and bad hygiene.

Hygienic Laboratory, U. S. Marine-Hospital, New York, May 16, 1890.

THE NECESSARY PEROXIDE OF HYDROGEN.

Read in the Section of Surgery and Anatomy, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY ROBERT T. MORRIS, M.D.,
OF NEW YORK.

Stop suppuration! That is the duty that is imposed upon us when we fail to prevent suppuration.

As the ferret hunts the rat, so does peroxide of hydrogen follow pus to its narrowest hiding place, and the pyogenic and other microorganisms are as dead as the rat that the ferret catches, when the peroxide is through with them. Peroxide of hydrogen H_2O_2 in the strong 15-volume solution is almost as harmless as water, and yet, according to the testimony of Gifford, it kills anthrax spores in a few minutes.

For preventing suppuration we have bichloride of mercury, hydronaphthol, carbolic acid, and many other antiseptics, but for stopping it abruptly and for sterilizing a suppurating wound we have only one antiseptic that is generally efficient so far as I know, and that is the strong peroxide of hydrogen. Therefore I have qualified it, not as "good," not as "useful," but as "necessary."

In abscess of the brain, where we could not thoroughly wash the pus out of tortuous canals without injuring the tissues, the H_2O_2 , injected at

a superficial point, will follow the pus, and throw it out, too, in a foaming mixture. It is best to inject a small quantity, wait until foaming ceases, and repeat injections until the last one fails to bubble. Then we know that the pus cavity is chemically clean, as far as live microbes are concerned.

In appendicitis, we can open the abscess, inject peroxide of hydrogen, and so thoroughly sterilize the pus cavity that we need not fear infection of the general peritoneal cavity if we wish to separate intestinal adhesions and remove the appendix vermiformis. Many a patient, who is now dead, could have been saved if peroxide of hydrogen had been thus used when he had appendicitis.

The single means at our disposal allows us to open the most extensive psoas abscess without dread of septic infection following.

In some cases of purulent conjunctivitis we can build a little wall of wax about the eye, destroy all pus with peroxide of hydrogen and cut the suppuration short. Give the patient ether if the H_2O_2 causes too much smarting. It is only in the eye, in the nose and in the urethra that peroxide of hydrogen will need to be preceded by cocaine (or ether) for the purpose of quieting the smarting, for it is elsewhere almost as bland as water.

It is possible to open a large abscess of the breast, wash it out with H_2O_2 , and have recovery ensue under one antiseptic dressing, without the formation of another drop of pus.

Where cellular tissues are breaking down, and in old sinuses, we are obliged to make repeated applications of the H_2O_2 for many days, and in such cases I usually follow it with balsam of Peru, for balsam of Peru, either in fluid form or used with sterilized oakum, is a most prompt encourager of granulation.

If we apply H_2O_2 on a probang to diphtheritic membranes at intervals of a few moments, they swell up like whipped cream and come away easily, leaving a clean surface. The fluid can be snuffed up into the nose and will render a fetid ozæna odorless.

It is unnecessary for me to speak of further indications for its use, because wherever there is pus we should use peroxide of hydrogen. We are all familiar with the old law, "*Ubi pus, ibi evacua*," and I would change it to read, "*Ubi pus, ibi evacua, ibi hydrogenum peroxidum infunde*." That is the rule. The exceptions which prove the rule are easily appreciated when we have them to deal with.

Peroxide of hydrogen is an unstable compound, and becomes weaker as oxygen is given off, but Marchand's 15-volume solution will retain active germicidal powers for many months, if kept tightly corked in a cold place. The price of this manufacturer's preparation is about 75 cents per lb., and it can be obtained from any large drug house

in this country. When using the H_2O_2 , it should not be allowed to come into contact with metals if we wish to preserve its strength, as oxygen is then given off too rapidly.

H_2O_2 must be used with caution about the hair if the color of the hair is a matter of importance to the patient, for this drug, under an alias, is the golden hair bleach of the *nymph's dispare*, and a dark-haired man with a canary-colored moustache is a stirring object.

MEDICAL PROGRESS.

SUCCESSFUL REMOVAL OF A TUMOR IN THE BRAIN.—At a recent meeting of the Berlin Medical Society, Dr. H. Oppenheim described an operation of this kind. The patient was a woman *æt.* 36. She had enjoyed excellent health till last September, when she began to suffer from clonic spasms in the temporal region and in the left arm, and frequently fell into convulsions. On recovering consciousness she complained of pain in the right temporal region. The symptoms recurred, and a diminution of the sensibility of the left arm and side set in. The diagnosis pointed to a growth in the brain. As internal treatment only made the patient's condition worse, and the left foot also became rigid, the skull was opened on April 26, under antiseptic precautions, and the surgeons removed a tumor about the size of a crown piece. The patient has felt decidedly better since the operation. She can move the left arm and foot without difficulty, and can walk about.—*Lancet*.

THE FIRST ABDOMINAL NEPHRECTOMY IN CUBA.—The *Revista de Ciencias Médicas* publishes an account of the first operation for the extirpation of a kidney which has been performed in Cuba. The operator was Dr. E. MENOCAL, of Havana, and the patient a young married lady who had had one child. She suffered from a tumor the size of the foetal head, occupying the right hypochondriac and lumbar regions. In the lower part of it fluctuation could be made out. There was pus in the urine, and all the physical signs pointed to the existence of a diseased kidney. This it was decided to remove by means of an incision along the outer border of the external rectus, cutting through the peritoneum twice. There were adhesions between the diseased kidney and the peritoneum, and in separating them an abscess was opened which gave vent to a quantity of very fetid pus. The opening, however, was closed by means of bulldog forceps, and no further difficulty was met with. The pedicle and the ureter were ligatured with silk soaked in perchloride of mercury. The cavity was washed out with hot sterilized water. A

silk suture in the form of a crown was applied between the edges of the posterior and anterior layers of the peritoneum, and two large drainage-tubes inserted, going to the bottom of the cavity, which was completely separated from the rest of the abdominal peritoneum. The external wound was sutured both deeply and superficially by metallic sutures, and an iodoform dressing put on. The bladder was washed out with a boracic acid solution. The whole operation occupied only twenty minutes. No serious complications occurred, and the wound was completely healed and the patient well in forty-six days. On examination, the tumor, which weighed about seven ounces, was found to contain eight abscesses, the cause of which was the blocking up of the ureter by an oxalate of lime calculus situated in the pelvis, and weighing twenty-four grains.

ARISTOL IN GYNECOLOGY.—Dr. G. (*Gazette de Gynécologie*) confirms the results obtained by Swiecicki, Veiner, Rohier, and others, with the use of this drug in endometritis and ulceration of the cervix. Swiecicki employed the drug in a 10 per cent. solution in oil, into which tampons were dipped and placed in the vaginal vault; he also used suppositories of the drug introduced into the uterine cavity. With this method rapid results were achieved in ulcerations, endometritis and eczema of the vulva. Aristol is absolutely free from all irritating properties, neutral in reaction, free from odor, and seems to have much the same action upon ulcerations, and inflamed mucous surfaces as iodoform, only to a greater degree. In practical gynecology it may be employed in powder, carried to the part upon small tampons of cotton. In one case of epithelioma of the cervix it was employed with prompt relief of the hæmorrhage, disappearance of fetor and the part presented a clean granular surface. In endometritis, suppositories may be used containing 1 grain of the drug.

"One single point is to be especially observed if the best results are to be obtained in the use of this new product; it should never be conformed with iodo-thymol, and biniodide of thymol, the former of which it closely resembles. The last substance contains alkaline iodides that are irritating to wounds and mucous membranes."

SPECIFIC TREATMENT OF LOCOMOTOR ATAXIA.—The almost uniform failure of specific treatment in tabes, is a sufficient excuse for quoting a single authenticated successful result. GAUCHER (*La Semaine Médicale*) reported to the Société de Dermatologie et Syphiligraphie, the case of a man *æt.* 27, who was infected with syphilis in 1876. Eruptions appeared upon the hands in 1880, and two years later, he had lancinating pains in the arms and legs, difficult locomotion, and diplopia. He was treated with sulphur

baths, douches and bromides, but without benefit. In 1883 he was markedly ataxic, presented plantar anæsthesia, loss of patella reflex, and walked with great difficulty. Inunctions of mercury were ordered with gram doses of potassium iodide thrice daily. The same week vision improved, locomotion was easier, and at the end of six weeks the patient was seemingly perfectly well. Since July, 1883, the patient has attended to his business, and there has been no signs of ataxia. Small doses of iodide of potassium have been given from time to time.

EFFECTS OF ALCOHOL UPON THE NERVOUS SYSTEM.—In the laboratory of PROF. MIERZEJEWSKI (*St. Petersburger Med. Wochenschr.*), dogs were fed upon 40 per cent. alcohol, the fluid being conveyed directly to the stomach through a tube, in the proportion of 1 ccm. for each kilogram of body weight—this dose was later increased to 6 to 8 ccm. The dosage was kept up until the death of the dog, which ordinarily took place in from five to six months, though one lived eight months. One dog, who had been poisoned with alcohol for some months, was killed in thirty-two hours by large doses; others were immediately killed by large doses—acute alcoholic poisoning. In the chronic poisoning was found general hyperæsthesia, paralysis of the legs and general muscular weakness. Post-mortem examination revealed congestion of the meninges of the cord and brain in the cases of acute poisoning. In the chronic cases, the grey matter of the cord and brain were distinctly hyperæmic. The nerve cells in the grey matter of the cord were degenerated, vacuolated, the protoplasm broken up into stringy masses. The granular matter had disappeared. The axis cylinder processes, as well as the nuclei, were obscured by the changes in the protoplasm. Leucocytes were sparingly found. The inflammatory process was most pronounced in the anterior horns. Medulla, pons and hemispheres presented similar changes in the grey substance, but not in so great a degree. The dog which was at first chronically poisoned for some months, and then killed by large doses in a few hours, presented the same changes as those chronically poisoned. The hyperæmia of the grey substance was more marked in the cases of acute poisoning, and showed a tendency to involve the white substance. In all cases, the process was an ascending one, and the lumbar and cervical portions of the cord were always the most affected.

AN OPERATION FOR ENTEROLITH.—S. CHALAFOW reported the removal of an enterolith before the Medizinskoje Obosrenije (*St. Petersburger Med. Wochenschr.*). The patient, a peasant woman 50 years of age, had suffered for the past twenty years from constipation, tympanites, vomiting, and pain, especially in the right hypogastrium.

The attacks occurred at intervals of from three to six days. Fæcal vomiting was never observed. Upon examination, two tumors were found to the right of the umbilicus, separated by about 1 inch. They were hard, round, smooth and freely movable. Pain was felt at this point, both upon pressure and spontaneously. It could be determined that the tumors were not connected with the genital organs, but their exact nature could not be determined. A laparotomy was made, and the fæcal stones removed through an incision into the ascending colon. Silk sutures were used in closing the wound in the gut and abdominal wall. Sutures were removed at the end of eight days, and in three weeks the patient was discharged cured.

AN AMOEBA FOUND IN DYSENTERY AND ABSCESS OF THE LIVER.—DR. WILLIAM OSLER (*Centralblatt für Bakteriol. und Parasitkde.*) says that Lösch, Koch and Kartulis have found an amoeba-like organism in dysentery. Kartulis has made the further observation that in liver abscess accompanying dysentery amœbæ are found. So far as he knows these bodies have only been found in Russia and Egypt, so that the following observation has additional interest from the fact that they are also found in the New World.

The patient had lived in Panama for five years, where he had suffered from chronic dysentery. In May, 1889, he came North and subsequently went to Vienna, where he was treated for recurrent attacks of dysentery. In December he returned to Baltimore, where he was seen by Dr. Osler. For six weeks the patient suffered from slight chills, and sweats. On March 22, two abscesses in the right lobe of the liver were opened. The contained pus was white, of the consistence of cream, and in part stained with bile. Upon examination active amoeba-like forms were found, having about twelve times the volume of a white blood corpuscle. They changed their form as rapidly as the liveliest swamp amoeba. Their structure presented a homogeneous outer protoplasm, within this a granular substance in which small cells of different sizes were found, and an occasional nucleus. These amœbæ were also found in active movement in the fæces. The author thinks that the structure, movements, and general appearance of this organism leaves no doubt but that it belongs to the parasitic forms of the amoeba.

TINCT. IODINE IN BRONCHOCELE.—DR. DAVIES (*Br. Med. Jour.*) says tinct. iodine in 5 minim doses, with hydrochloric acid and glycerine, answers well in simple glandular cases of bronchocele. This amount may require to be increased. When there is fibrous growth present, the injection of tinct. iodine is necessary, and Dr. Davies has never seen any serious results, if we exclude cases of cystic goitre.

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SATURDAY, AUGUST 9, 1890.

THE ENLARGEMENT OF THE ASSOCIATION.

It is essential to the well-being of this organization, if any measures shall be adopted with a view to the increase of its membership and the enlargement of its usefulness, that such measures shall not only be practicable in their operation, but manifestly beneficial in their results. Every suggestion which shall be made and every plan which shall be proposed, needs to be wisely and deliberately considered before decisive action is had. It is safe to presume that such deliberation will be assured since the views of several thousand of our members must be harmonized before any essential changes can be made.

We doubt if there be a single member of the Association who is actuated by a revolutionary spirit, or who would willingly dispense with any of our methods of procedure, so far as they are valuable, unless in their places better ones can be substituted.

There is a general conviction, and it has a strong hold upon our members, that in the past, as we were then conditioned, the present plan of organization was the best that could have been adopted. Under its guidance the Association has moved steadily on for more than forty years; but during these forty years surprising changes have come to us in all our surroundings. They are as apparent in matters pertaining to medical men and medical organizations as elsewhere. In view of these new conditions many of our most prominent and reliable members are led seriously to inquire whether the time is not at hand when

some essential modification should be made in our plans of organization, which shall render the Association more surely the representative National Organization in this country. There are now within the American Commonwealth at least seventy thousand active medical practitioners, and the number of these which shall be in close affiliation must be largely increased if we are to maintain in fact, as in name, our prominence as the National Medical Association.

As to the methods by which a result so desirable can be attained, we do not propose by the urgency of our own convictions to forestall the wisdom of those who may be appointed in due time to formulate a report upon this important subject.

To those who are seriously considering what modification of our present plan can wisely be made, we commend a careful study of the constitution and by-laws of the Medical Society of the State of New York. The plan there adopted has been fully tested and meets with general approval, and with suitable modification, perhaps it could be adopted by the American Medical Association. The various State Medical Societies could be related to our central Association in some manner, as the Divisions are related to the State Society in New York.

Our local societies could be represented by delegates in the State Societies, and these in like manner in the National Association. The State Societies could labor efficiently for the perfection of local organization, and by a full representation of delegates greatly strengthen themselves and a union of such State Societies under one National Organization, would render it National indeed. If the American Medical Association can thus represent the aggregate of State and local societies, it will augment its membership by thousands, and can to a degree untold, increase its usefulness.

LEPROSY IN NEW BRUNSWICK.

There has been a lazaretto in northern New Brunswick since 1844. In July of that year it was opened on Sheldrake Island, in the mouth of the Miramichi river, having an area of thirty acres. The location was healthful and favorable to isolation, but the management of the lepers proved disagreeable to some of them, and they

would from time to time make their escape to the mainland by means of rafts and otherwise. The treatment was too much like that of prisoners, the building being surrounded by a high picket fence and the patients were locked in every night. Those who deserted were pursued, and when caught, were brought back by force. Some remained unfound in the woods on the mainland. In 1845, the lazar-house burned down, and it was suspected that the lepers set it on fire. In 1849, the unpopular island location was abandoned and a new lazaretto was built at Tracadie, about twenty miles further to the northward along the same coast. In 1851, the number of inmates was 37; the policy of the lofty fence was still in force and guards were employed to insure isolation. About 1849, DR. CHARLES LA BELLOIS was put in charge of the lepers, in order to enable him to test a proposed plan of treatment; he proclaimed quite confidentially the theory that leprosy is identical with syphilis, and therefore a curable disease. This episode resulted, of course, in failure.¹ In 1852, there was another fire, followed by a rebuilding the next year. Since the year 1868, the members of a sisterhood of nuns from the Hôtel Dieu of Montreal, have most unselfishly devoted themselves to the duty of nursing the sick lepers; a house adjoining the hospital has been built for them. The same medical officer, DR. A. C. SMITH, has been in charge since 1865. In 1880, the Dominion general government assumed control of the lepers, and an annual appropriation of \$3,200 has been allowed, increased slightly during the present year. The lazaretto is of wood, having two stories, rather small and low. The females occupy the upper part, and the males the lower. The high fence has been abolished and the lepers are much less averse to entering the hospital than formerly. The inmates are free to move about in the eleven acres of grounds, belonging to the institution, in which some of them do gardening, while others fish in the river, and the patients are generally content with this retreat. They deem themselves much better cared for than their predecessors of the Sheldrake island institution. They have great confidence in their priest, FATHER BABINEAU, who takes an active, personal interest in their welfare. In 1844, the number of known

cases was twenty. Prior to 1844, the number of cases known to have occurred and to have been fatal was twenty. No case is known to have existed earlier than 1815, when a French woman, URSULE LANDRÉ, became leprosy. She was descended from grandparents who had immigrated from St. Malo, in Normandy, where leprosy is said to have long existed, but no leprosy history could be attached to any of her progenitors, on either side. Ursule died in 1828; her husband and two sisters subsequently became lepers. The disease spread slowly, affecting the poorer members of a community that lived in a circumscribed district, and one almost inaccessible in those early days. The diseased unfortunates had little, if any, care or treatment, and were, for the most part, shunned by their neighbors. In some instances, the lepers were confined in a log-house or enclosure, constructed for the purpose, with an opening through the logs for food to be passed in to the dreaded person, or persons, until he, or they, became too weak to receive it, when, of course the end was not far off. Those who have suffered from the disease have been largely of French extraction, and at the present time all the cases are of that race. In times past, there have been occasional instances of the disease among Scotch, English and Irish people, but none among the Indians, so far as is known. That the disease is not increasing, but rather is diminishing, may be fairly concluded from the fact that during the past fifteen years the admissions to the Tracadie hospital have numbered only fifty-three cases, while in the fifteen years immediately preceding there were seventy-one admissions. From 1844 to 1888 there were admitted into the lazaretto 194 cases. Nearly all the victims to the disease ultimately betake themselves to the institution and die there; but some few have certainly died outside. Taking all these into an estimate of the entire number of cases from 1815 to date, it may be judged that there have been about 230 lepers in the seventy years and over, and that the number of cases has declined although the population has, meanwhile, surely multiplied threefold.

THE FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE will meet in Limoges, August 7. During the session a statue of Gay-Lussac will be unveiled.

¹ From paper by Dr. Murray McLaren, in the Maritime Medical News, May and July, 1890.

FRESH AIR FUNDS FOR CITY CHILDREN.

One of the most striking features of the charitable work of the present day is in the care taken of the young, especially of our young city-dwellers. The little people who are so fortunate as to be brought up in the country have about the same care now that they have always had; that is, they look out for themselves, and they are generally able to do it. But our city infantry need a great deal of charitable oversight. The movement is well-nigh universal, in all great cities, to help poor children, subjected to city overcrowding, to get away into the country. In Berlin, an organization, known as the Vacation-Colonies Societies, is favored by Imperial ladies, and has achieved an astonishing success in a very short time. In Paris, there have been for several years small societies for taking the young out of the city in the summer time. London has had, for seven or more years, its Country Holiday Fund, which is a union of a number of formerly independent efforts for the relief of certain special areas. The number of children who obtained an outing, last year, from London, was twenty thousand, under the direction of thirty-six district committees, and distributing the children to not less than 450 country centres. The Fund expended \$65,000 for that year. The majority of the children are placed in the country during the school vacation, which begins near the close of July and lasts only three weeks. The children go to cottages, for the most part, in small groups; and the same pilgrimage is made by the same children year after year in not a few instances. A cottage is seldom taken from the list. The advantages of this comprehensive system are many, not the least of which is the saving of time and money, and reducing the opportunities for imposition. Under the old private enterprises, designing persons took occasion to make use of two or more of the funds, and last winter, when for the first time an effort at organization was made in Boston, there were found to be over forty fresh-air charities, some of which were designed to cover the same relief-territory, and were liable to have their efforts misapplied. In New York City, as well as in some other seaboard cities, the enterprises are chiefly private charities, without any common aim or coördinated action, whose missions do not extend much beyond giving an outing at the seashore to the sickly children and

their mothers, generally for a few days or a week at most. In addition to these are the single-day excursions by boat to some not very distant point, for the object of removing the children, whether sick or well, for a breath of fresh sea-air. These are all useful in their way, and help to keep down the midsummer death-rate.

EDITORIAL NOTES.

DEATH OF DR. WILLIAM BRODIE.—Dr. William Brodie, of Detroit, died at his residence in that city on July 30. Few men in the medical profession were more widely known than was Dr. Brodie. For more than a third of a century he had been an active member of the American Medical Association, and his loyalty to its interests was proverbial. Its highest honor was conferred when he was elected President. In the discharge of the duties in connection with that office, his services commanded universal approval. It is difficult for the moment, as the news of his death comes to us over the wires, to realize that in the future meetings of the Association, his place will be evermore vacant. His relations with the Association have been so inseparable, that the record of his life becomes a part of its history, and as time permits, other pens will do ample justice to his memory.

THE CONGRESS AT BERLIN.—As we go to press, this venerable body is in session. The distinguished representatives of medicine and surgery are there from every land. It is one of the marvels of the age that such a meeting is thus feasible. The ocean voyage is no longer a barrier, and the cable gives constant reports of its proceedings. A unison of purpose prevails in all that vast assemblage. Its deliberations concern and compass the globe. Medical men from every nation are met in common, and at their own expense, to consider the best means of promoting the health and happiness of the human race. The one great hinderance to perfect success in such a gathering as this is the absence of a common language for the expression of the common thought. It becomes a matter of exceeding interest, as to the manner in which this difficulty shall finally be overcome. What form or speech shall finally avail? Shall the Latin be revived? Shall one of the living languages prevail? Or shall a new language be created? Which?

DR. PAUL LOYE, æt. 29, died in Paris on July 5, of infectious pericarditis. During his too brief career he was attached to the laboratory of Paul Bert, and later to that of legal medicine under Brouardel. He was principally known from his studies upon decapitation—particularly his thesis for the doctorate, *La mort par la décapitation*, which attracted marked attention at the time of its publication.

PHILIPPE RICORD MONUMENT. — *L'Union Médicale* publishes the first list of the subscriptions to the monument to Philippe Ricord. The total amount was 8,220 francs.

PARIS PASTEUR INSTITUTE. — During the month of May, 146 persons were treated at the Pasteur Institute in Paris. Thirty-seven of these were bitten by animals in whom rabies was experimentally determined, ninety-one by animals whose condition was certified by a veterinarian, and eighteen bitten by animals suspected to be rabid.

KUSATSU, THE JAPANESE LEPROUS VILLAGE. — In the last number of the *Revue des deux Mondes*, M. Louis Bastide describes the Japanese leprosy village, Kusatsu. The waters of this resort are said to be especially beneficial in the treatment of leprosy. All the attendants, the proprietors and waiters at this resort are affected with the malady.

FRENCH STATISTICS. — In France the number of marriages in 1888 had fallen to 7.24 per 1,000 inhabitants. The average age of the women was 25 years, and of men 29 years and 9 months. The number of married men in the large cities is less than in the country. In Paris, 570 men out of each 1,000 are married, while in the country at large the proportion rises as high as 609.

Births were in the proportion of 23 to the 1,000 inhabitants, while in England the proportion rises as high as 32, and in Prussia to 48. Births are less numerous in the large cities, the department of the Seine (Paris) gave ten births to each 100 women between the ages of 15 and 45, while in the whole of France the figure reaches 12 to 13. Twenty-eight per cent. of all births in Paris are illegitimate, while for the whole country the percentage falls to 8.

A NEW CONGRESS. — A Congress of Microscopists will convene in Detroit on August 14, and continue four days. "The Influence of Electricity upon Protoplasm," will be the subject of the

opening address. Prof. Marshall D. Ewell, of Chicago, will present some of the medico-legal questions involved in the Cronin case.

ONTARIO MEDICAL SOCIETY. — The tenth annual meeting of the Association was held at Toronto, Dr. J. A. Temple, of Toronto, President. About two hundred and fifty members were present. It was one of the largest and most successful meetings yet held. The president's address contained a strong plea for a uniform license for the Dominion.

CHOLERA. — We have no reports of cholera in Russia or Upper Mesopotamia, and it is not advancing north or east of Massoul. The favorable period for its development in the cities of the Euphrates is later in the season, and an outbreak may be anticipated at any time. The same may be said of Persia, where cholera has not prevailed since 1873.

MEDICAL DEPARTMENT OF YALE COLLEGE. — We are glad to note that an effort will be made to endow this valuable medical school, and thus enable it to maintain its place in the front ranks of our medical institutions. The alumni of Yale College and the medical profession of Connecticut should make this endowment a fixed fact. They cannot do a better thing.

THE PETER-PAUL HOSPITAL, of St. Petersburg, has been given 50,000 rubles to erect barracks for the treatment of acute diseases.

A VISIT POSTPONED. — It had been very generally announced that Sir Morell Mackenzie would visit America and lecture in some of our principal cities during the month of October next. It is now reported that, by reason of ill health, he is obliged to cancel his engagements, and defer his visit until some later date.

THE EFFECTS OF EXTREME TEMPERATURES. — It will be a matter of interest to note the effects of the extreme temperatures now so general in this country, upon the general health. It is especially desirable to observe their influences upon the diseases of children. We have the conviction that during the present heated term a far less number of cases of sunstroke have been reported than usual. Is it possible that an unusual dryness in the atmosphere has conducted to this result?

TOPICS OF THE WEEK.

THE HIGHER MEDICINE.

De Quincey complains, in a passage in his autobiography, that "we English are haters and revilers of ourselves beyond all precedent, disparagers of our own eminent advantages beyond all sufferance of honor or good sense, and daily playing into the hands of our enemies." If this be true of educated Englishmen in general, it has a particular application to our own method of disparaging the art of medicine, especially in comparison with that of surgery, and nothing is more frequent amongst us than the complaint that medicine seems to lag behind whilst the physical sciences stride majestically forward. This disparaging attitude towards medicine arises partly from ignorance of the true province and nature of medical science, and partly from the universal practice amongst mankind of depreciating the things in which they excel. It is always the learned men who affect to despise letters, and the wealthy who speak disrespectfully of money. These can afford to do so. But an imperfect appreciation of the true nature of the physician's art is, we suspect, at the bottom of most of the reflections cast upon it. Sound judgment, combined with a high order of manual dexterity, will make an excellent surgeon; but a great physician needs almost the mental equipment of a great poet. What Emerson said of the poet is applicable in its degree to the true physician:

"As the eyes of Lynceus were said to see through the earth, so the poet turns the world to glass, and shows us all things in their right series and procession. For through that better perception, he stands one step nearer to things, and sees the flowing or metamorphosis. . . . The poet alone knows astronomy, chemistry, vegetation, and animation, for he does not stop at these facts, but employs them as signs."—EMERSON: *The Poet*.

It is not enough for the physician to know anatomy, physiology, chemistry, and pharmacology; he must not stop at knowing these, but must put them into the alembic of his brain, and transmute them into medical science. Professor Huxley said the other day that it would be simply manslaughter for a doctor to treat his patients on the raw and undigested principles of physiology. Medicine must, therefore, never be looked upon as a mere science, because it is much more than that; it is wisdom sublimated from many sciences; and this is why the Gulls, the Jenners, and the Clarks can never be as common as the mere scientists who work by rule and scale. When Coleridge was accused of plagiarising in his *Hymn to Chamouni*, from the poem of Frederica Brun on the same subject, it was easily explained that though he had taken her frame work and used certain of her ideas, he had done so simply to glorify and endow them with life. With her they were dead phrases; Coleridge created the *Hymn to Chamouni* out of them. Just in proportion as the physician can create diagnosis and treatment for the cases which come before him as living and as various as the patients which are the subjects of the different diseases, just by so much is he a true physician. The inferior mind may see the same things as the superior, but the latter alone "sees their flowing

and metamorphosis." This is why patients would go and talk to Sir William Gull and derive benefit from the conversation, though they came away with no prescription, and took no drugs from his hands. The vulgar mind cannot understand the reason of this, and the hard scientist smiles a little superiorly at the idea.

We have been led into this train of reflection by reading Mr. Guy Beddoes' interesting work, *Habit and Health*. It is a selection from the works of the wisest physicians of modern times, and, within the compass of 350 pages, there is enshrined a medical philosophy which is the essence of the best teaching on health of body and mind. Nothing could better answer the objection that medical science has not kept pace with other branches of human knowledge than a perusal of its deeply instructive pages.

A medical writer recently stated that in some departments our art "had done nothing but retrograde for a thousand years, and in the last fifty years we have done little but pick up the clues which were lost when the Alexandrian library was burned." Yet the men of the past were not such fools as we are too apt to consider them; and as we read the wise advice of such men as Hunter, Wilson Philip, Paris, Abernethy, and Johnson, we are constrained to admire their insight and the breadth of their mental vision—if only because they have shown us how much lies within our own power in the maintenance of health. Such men speak with the authority of genius, and not as the scribes who lack such insight; and their genius is shown by their faith in the power of Nature to cure diseases, and the caution with which they estimate the power of medicines to do so. The true physician endeavors to learn the secrets of Nature by reverently questioning her, and Mr. Guy Beddoes has filled his pages with the answers which never fail that patient and respectful attitude. That we have in modern times learned this much at least is the earnest of our future advance. Sir Andrew Clark has pointed out the aid which physiology has rendered to the physician in a hundred ways—notably in respect to the influence of our modern undue work and worry in depriving the stomach of its rightful share of nerve force, and so causing it to fail in its duty. Dr. Andrew Combe, by application of the principles of physiology, showed how mental stimulus influences muscular action, and indicated the influence which the higher feelings, after they have the ascendancy, exert in promoting the general health. He has explained how the lower feelings, when unrestrained, how the mind oppressed with grief, anxiety or remorse, have a direct tendency to produce bad health. We believed all this before on the authority of philosophers and theologians. The physiological physician gives us scientific reasons for our faith. But he goes further. As we are not all intellect, we must not concentrate our vital action in the brain, or we shall deprive the stomach and other organs of their requisite nervous stimulus. Literary men, by a disregard of this axiom of the physiological physician, often become hypochondriacal dyspeptics, and blame the art of medicine for not curing by drugs what is the outcome of their own violence to physiology. As we turn the pages of this book, we meet, in

a score of pregnant passages, the warnings of wise physicians against the lives of "wear and tear" led by so many, Englishmen especially, the restless activity of mind ever directed to one end, and that not the highest. Physiology has pointed the moral, and doctors have preached the gospel of, serenity, but too often they have been as voices crying in the wilderness, for no man regardeth them, and the reproach of the almost certain result of the disregard of their teaching is laid at the door of medicine. The "terrible cost of nerve tissue," as George Henry Lewes aptly said, is disregarded even by the wisest of us; when intellectual activity is accompanied by agitating emotion it is ruinous. "Our passions are destroying flames." This is sound teaching, and doctors have endorsed it. The evil influence of anxiety on digestion alone is well ascertained; but as we cannot counteract it by drugs, we are often reproached for incompetence. The whole teaching of modern medicine is in the direction of a better regulated mode of life, prevention rather than cure, or if cured rather by a reconciliation with offended Nature than a warfare with disease by medicines.—Editorial, *British Medical Journal*.

THE PATHOGENESIS OF YELLOW FEVER.

Drs. Finlay and Delgado, who have for some time been engaged in investigating the bacteriology and pathology of yellow fever in Cuba, recently read a paper on the subject before the Havana Academy of Sciences, in which they detailed their experiments and discussed their significance, with special reference to the researches of Dr. Sternberg, who a short time ago paid a lengthened visit to the island for the purpose of studying the subject. They say that Sternberg's micrococcus *Finlayensis* has been found by Dr. Kinyoun on the skin of patients suffering from malarial fever, in localities where yellow fever does not occur, and that it is therefore impossible that this microorganism can bear any relation whatever to the causation of yellow fever. The micrococcus *tetragenus versatilis* has been found in the serous fluid of blisters on yellow fever patients, in spite of the most careful disinfection of the skin, in one-half of the cases examined, and in three-eighths of the specimens on which observations were made. This micrococcus was found in the blister serum of persons resident in Havana, and acclimatized, in two out of seven cases examined, and in three-thirteenths of the specimens taken, but only in cases where the disinfection of the skin had been omitted, or in which it had been but imperfectly performed. Nothing of the sort was found in any of the eight specimens taken from four persons whose skin had been as thoroughly disinfected as in the case of the yellow fever patients.—*Lancet*.

SHALL CONSUMPTIVES MARRY?

While in many ways the human race is progressing, and while the world is more temperate and charitable than in ages past, yet in many things we are really retrograding. Particularly is this the case in regard to the importance of raising healthy children.

The Spartan woman's business was to be the mother of brave and robust children. This was one of the prin-

cipal points observed by Plato in his "Philosophical Republic." He proposed that the most excellent among the men should be joined in marriage to the most excellent among the women; and the inferior citizens matched with the inferior females; and that the offspring of the first should be brought up and the offspring of the others should not. Yet to-day the great majority of marriages are made without any thought or idea of the character or vigor of the offspring that are to result therefrom.

Recently, the State Board of Health, perceiving the contagious nature of tuberculosis, have requested all Superior Judges, before sentencing a prisoner to the State Penitentiary, to have him examined by the County Physician, in order that special measures may be taken to prevent the contraction of this disease by other criminals. This movement we all applaud. But if the lives and health of these malefactors are so important, are not the lives of those who do not belong to the criminal classes important? Why should not the State adopt some means to prevent the marriage of individuals who have diseases that would be likely to be perpetuated in their offspring? There is not a physician before me to-day, but knows of marriages that he realized were unwise at the time they were made, and that resulted in children who were born to suffering, sickness and early death.

Now, what remedy can we offer for this terrible state of affairs, which is said to be undermining the strength of the people of California? If the county physician can examine every criminal before he is sent to the Penitentiary, why should not every man and woman who desire a license for marriage be required, before a license is issued, to show the County Clerk a certificate from the county physician, certifying that both he and she were free from any taint of consumption, gonorrhœa, syphilis or scrofula?

I ask you, gentlemen, to give this subject, which seems to me a very important one, your serious consideration.

[From President's Annual Address to the Medical Society of the State of California. By Walter Lindley, M.D.]

FRANCE AND FOREIGN MEDICAL MEN.

If the committee on the Medical Profession Bill in France is to have its way, foreign diplomas, of whatever country, are likely to be met with slight respect. The committee proposes that no medical man holding a foreign diploma, shall be allowed to practice in France unless he has received the degree of Doctor of Medicine from a French faculty, after having passed the required examinations. In certain cases, however, the Minister of Public Instruction may grant an exemption from some of the examinations. Foreign medical students are to be subjected to the same rules as French students. No person is to be allowed to practice as a dentist unless he has a diploma of doctor, or has obtained a special diploma as dentist, issued by the government, after examination and a preliminary course of study. Such suggestions give a poor opinion of the progress of truly liberal feeling in France. As they affect England we can only regret them, and hope they will still not become a law. The numerous people of British nationality in France, and the state of our medical education, tend to stamp such proposals as alike harsh and unreasonable.—*Lancet*.

PRACTICAL NOTES.

TREATMENT OF DYSENTERY BY ENEMATA OF CORROSIVE SUBLIMATE, ETC.

It is now generally recognized that certain morbid conditions of the intestinal tract may be favorably modified by various drugs belonging to the class of antiseptics, among which the chief are calomel, bismuth, naphthalin, and thymol. It is a noteworthy fact that these substances are insoluble, and it is in virtue of this property that they are enabled to run the gauntlet of the absorbents and exert their specific action upon the intestinal contents. The best of all antiseptics, corrosive sublimate, has thus far been of little use for the purpose mentioned, because it was supposed that no benefit could be exerted by any but a lethal dose. While this may be true of its administration *per os*, it is shown by G. Lemoine (*Bull. gen. de Thera.*, January, 1890) to be a mistake so far as concerns administration *per rectum*.

Lemoine has treated fifty-four cases of dysentery by enemata of corrosive sublimate, and with the happiest results. The strength of the solution was one to five thousand, of which two hundred grams were administered three times a day; later, two hundred grams of a solution of one to three thousand were injected twice daily. Improvement showed itself, as a rule, after the first injection, the first symptoms to disappear being the tormina and tenesmus. In a certain number of cases the tenesmus was so great that the enema could not be administered without a preliminary treatment, which consisted in painting the sphincter with a five per cent. solution of cocaine.

In acute cases a cure resulted from this treatment in from three to four days; whereas, in the more chronic cases which presented themselves for treatment on account of an acute exacerbation, a cure was effected, as a rule, in one day. The latter statement is somewhat startling in view of the well-known fact that chronic dysentery is decidedly rebellious to all the usual modes of treatment.—*Med. News*.

CACTUS GRANDIFLORUS IN HEART DISEASE.

Dr. Orlando Jones publishes his experience of cactus grandiflorus, which he claims is likely to prove a useful adjunct to our resources, especially in asthenic conditions of the heart. Digitalis, strophanthus, and convallaria are not always reliable in the varied conditions of the heart with which we daily meet. The action of digitalis is not infrequently disappointing when we are dealing with a feeble heart, especially if that feebleness is excessive and of long duration. In such instances cactus grandiflorus may fill a gap where other remedies appear to be lacking. The action

of this remedy seems to be the very opposite of that of digitalis, that is, in the final stage it strengthens the heart.—*Brit. Med. Jour.*

EFFECTS OF CAFFEINE.

In an able article on the study of caffeine, Dr. Edward T. Reichert reached the following conclusions:

1. The pulse rate may be diminished during the first and last stages of the poisoning, but it is generally decidedly increased. During the first stage the diminution is due to stimulation of the cardio-inhibitory centres in the medulla oblongata and heart, and during the last stage to a direct depression of the heart. The increase in the pulse rate is due to a depression or paralysis of the above mentioned cardio-inhibitory centers.

2. Arterial pressure during the first stages of poisoning is generally either unaffected or diminished, but occasionally a trifling increase is noted; during subsequent stages it is diminished. The increase is due to a direct stimulant action upon the blood vessel walls, increasing vascular tension. The diminution is due chiefly to a direct depression of the heart, and to some extent, doubtless, to a secondary paralyzing action on the vessel walls.

3. The acceleration of the heart-beats may be accompanied by no appreciable alteration in blood-pressure, but generally by a more or less decided diminution, which is dependent upon cardiac depression:

4. Caffeine diminishes the heart's efficiency for work, arrests it in diastole, sometimes induces sudden paralysis, and is, therefore, a cardiac depressant.

5. The asserted stimulant action upon the circulation is, doubtless, subjective, and dependent upon an excitation of the cerebral centers.—*Medical News*.

CHLORALAMID.

Chloralamid is a combination of chloral and formamide. It comes in colorless crystals, having a bitter taste, being soluble in ten parts cold water and in one part alcohol. It is more freely soluble in warm water under 140° F. Excess of temperature causes separation of the ingredients.

It may be given in wine, water or capsule.

The dose is from twenty to forty grains.

It produces sleep in twenty-five to thirty minutes. The sleep lasts from six to eight hours.

The indications for its use are:

Nervous excitement.

Neurasthenia.

Insomnia in heart or lung disease.

It does not act where the insomnia is accompanied by severe pain or mental disturbance.—*Therapeutic Gazette*.

SOCIETY PROCEEDINGS.

British Medical Association.

*Annual Meeting held at Birmingham, Eng.,
July 1, 1890.*

DR. THOMAS MORE MADDEN, of Dublin, read a paper in the Section of Diseases of Children, on
PHYSICAL EDUCATION IN RELATION TO MENTAL
DEVELOPMENT IN SCHOOL-LIFE.

The following is an abstract :

The respective claims of physical and mental training, and the evils arising from the neglect or abuse of either are obviously questions of the highest medical as well as social interest. This neglect now presents itself in two different aspects. On the one hand, the children of the poor in England are compulsorily subjected at an absurdly early age to a forcing and injurious system of mental cultivation. Whilst on the other hand, in the case of those of a better social position, the physical powers are not uncommonly over-trained at the expense of the mental faculties. Of these errors, the former is the most important, and to its operation is, I believe, largely ascribable the apparent diminution of physical stamina observable in too many of the youth of the present day as compared with the physically more robust, if intellectually less cultured generation of the pre-educational period. Looking at the overtaken and anaemic little children now chained to the desk by the School Boards, we might be tempted to believe

" 'Twas not the sires of such as these
Who dared the elements and pathless seas ;
But beings of another mould—
Rough, hardy, vigorous, manly, bold ! "

At the present time, a large part of the first ten years of life, which should be primarily devoted to physical and moral training, is given up to the development of the mental powers: the child, when a mere infant, being compelled to attend some school, where the immature brain is forced into abnormal and disastrous activity. On its return home, jaded in mind and body, to prepare for next day's task, such a child is necessarily unfit for the enjoyment of the physical exercise which is essential for its bodily development and health, or for the still more important elementary training of the affections and moral faculties and instillments of religious principles, which are better acquirable from home teachings than from any School Board system. We are all of course agreed as to the duty of properly educating children so as to fit them mentally and bodily for the increasing requirements and competition of modern life. But as to the extent to which the former should be carried and the latter neglected in early childhood, there is unfortunately a great discrepancy between the rulers of

the Education Department and the views of those who have to deal in disease with the consequences of the violation of the laws of nature. And hence, whilst little children are thereby over-worked into disease or death, the physician must still raise his protesting voice, albeit it would apparently seem unheeded.

During the first eight or ten years of child-life, the amount of mental cultivation which a child's brain is capable of receiving with permanent advantages is much less than is commonly believed. No greater physiological mistake is possible than that of attempting any considerable degree of such culture until the sufficient development of the physical stamina and moral faculties is accomplished. The organ of the mind is as much a part of the body as the hand, and ere either can function properly, its vital force must be fostered and maintained by nutrition and developed by physical exercise. A large proportion of those who come within the provisions of the Elementary Education code are semi-starved children of the poorest class who, when thus debilitated by privation, are necessarily as much incapacitated for any mental strain as for the accomplishment of any herculean feat of physical strength; it being not less inhuman, injudicious, and impolitic to expect the former than it would be the latter from those so circumstanced.

If the State, for reasons of public policy, determines that all children shall be compulsorily educated from their earliest years, it should certainly afford the means by which this may be least injuriously and most effectually carried out, by providing food and physical training as well as mental education for every pauper child attending an Elementary school.

Amongst the results of overpressure in such schools under the Boards referred to, are brain diseases in all forms—viz., cephalitis, cerebritis, and meningitis, as well as headache, sleeplessness, neuroses of every kind, and other evidences of cerebro-nervous disorders. On no other ground can the increasing prevalence of these affections amongst the little victims of the Educational Department be accounted for or explained, than by ascribing them to the new factors "brain excitement" and "overpressure," which in the case of young children are now too commonly disastrously associated with the process of mis-directed education and neglected physical training.

In connection with the physical management of childhood, I may add a few words on the abuse of alcoholic stimulants. The evils resulting from the abuse of alcohol were never so prevalent as at present, and are traceable in the diseases of youth as well as in those of adult existence. The results of this acquired or inherited alcoholism are brought under clinical observation in the form of cerebral gastric and hepatic disorders, and especially cirrhosis of the liver, which as well as

the protean forms of cerebro-spinal diseases, and the various neuroses so frequently noticed in hospitals for children, and to which I have elsewhere directed attention. In the majority of these cases of juvenile alcoholism that have come under my care in the Children's Hospital, Dublin, this tendency appears inherited and most marked in those whose mothers were inebriates—intemperance in women also bearing in other ways on the diseases treated in hospitals for children, where its effects are strikingly evinced by the moral and physical deterioration of the offspring of the drunken, and by their special predisposition to strumous, tubercular, and other constitutional taints.

Under no circumstances should alcoholic stimulants be given to children, save in the guise and defined doses of other remedial agents—my experience in hospital and private practice, at home and abroad, having amply confirmed the view expressed in a work of mine published many years since, viz., that it is physiologically wrong, as well as morally unjustifiable, ever to allow a healthy child to taste alcohol in any form.

DR. MADDEN also read a paper in the Obstetric Section on

OVARIAN HERNIÆ; THEIR CAUSES, SYMPTOMS AND TREATMENT.

Ovarian herniæ are amongst the most neglected, although clinically they should be included amongst the most important, of the troubles that come before us in gynecological practice. In the great majority of cases they occur downwards into Douglas' space, and in such instances the left ovary is that most frequently displaced. The next in point of frequency of these herniæ, are those occurring in the inguinal regions where they are either found above Poupart's ligament, or is more commonly the case, follow the course of the canal of Nuck downwards and forwards, and so present in the labia where they may be readily recognized. In the former or directly downward variety of displacement, the ovary may be discovered on vaginal examination in the recto vaginal fossa as a small, oval-shaped, firm, elastic and highly sensitive tumor, bulging forward into the post-cervical *cul de sac*. In the larger number of cases ovarian herniæ, especially those in Douglas' space, result from the *vis a tergo* of abdominal or uterine tumors, or from the tension on the appendages occasioned by displacements of the uterus.

Diagnosis.—Until recently these herniæ when inguinal were very generally compounded with enlarged glands; when labial with other tumors in that situation; and when downwards with pelvic abscess, and hæmatocele. Or as often happens, they are mistaken for the retroflexed fundus uteri, and the patient suffering from an ovarian prolapse is vainly treated for a non-existent retroflexion or retroversion of the uterus.

There can now be no excuse for such errors. The sudden occurrence of the tumor, its physical character, the peculiar dull sickening pain, and the extreme tenderness and nausea manifest on examination, are sufficient to enable a correct diagnosis to be made by any competent gynecologist.

Treatment.—Where the ovarian herniæ takes place through either of the abdominal rings or downwards into Douglas' space, it may in some instances be reduced, as any other herniæ similar situated. In the majority of cases, however, such herniæ are irreducible when discovered, and must either be supported in the former case by applying a hollow truss, whilst in the latter case the prolapsed ovary must be replaced if possible, and kept in position with a peculiar form of pessary exhibited, specially devised by Dr. More Madden for the purpose, or failing this, if the symptoms be urgent the ovary must in some cases be removed.

The foregoing views are illustrated in the paper of which this is in an abstract by the details of several instances of ovarian herniæ, exemplifying the clinical history and treatment of such cases.

Allegheny County Medical Society.

Special Meeting, June 17, 1890.

J. A. LIPPINCOTT, M.D., PRESIDENT PRO TEM.,
IN THE CHAIR.

CASE OF SUSPECTED VOLVULUS.

DR. BATTEN reported: On Sunday, June 8, I saw a man who had been suffering for several days with intense abdominal pains. There was sickness at the stomach. I gave him a quarter of a grain morphia sulphate and extract of belladonna every hour. That did not control the pain, and Dr. Pollock was called in consultation. We continued with the belladonna and the sulphate of morphia every hour, and a hypodermic injection of morphia every six hours. This quieted him. The morphia and belladonna were continued steadily, and when the pains became unbearable, morphia was injected. He continued in that way with vomiting, until Friday. I omitted to say we injected warm water into the bowels. On Friday afternoon there was a passage of the bowels and we omitted the hypodermic injection and the morphia and belladonna, and gave him Rochelle salts in small doses. Yesterday he had three hours sleep. Last night he slept all night. To-day he is well.

DR. BUCHANAN: I would like to know if any tumor could be felt?

DR. BATTEN: No, but the abdomen was very hard.

DR. LANGE: I would submit that Dr. Batten

has given no evidence of intussusception; it might have been a case of ileus, a case of fecal obstruction or of typhlitis; Dr. Batten has given no evidence of volvulus.

DR. BATTEN: It was an obstruction of the bowels. No hard matter came away after the bowels commenced to move.

DR. HUSELTON: I would be disposed to criticize the treatment. I cannot readily understand why he should resort to purgatives in such a case. Of course the opiates would be all right to allay pain and quiet the bowels. It seems to me that purgatives would hardly be proper in such cases.

CASE OF PUERPERAL CONVULSIONS.

DR. DUFF: About one year ago, I reported a case of puerperal convulsions to this society. I was called to see a young woman of twenty, about two weeks before the time of labor. I found general anasarca as well as urine loaded with albumen, and I treated her, as I indicated in my report, by giving her digitalis. About six days after, I was called to see her. She was taken in convulsions, which could only be controlled by chloroform. These we controlled for about twenty four hours when they returned. I then dilated and delivered her of a male child. The child lived about a week. The mother made a good recovery and did not have convulsions after delivery. Against my orders she cohabited with her husband and became pregnant within three months. Before pregnancy her urine was normal. At four months I examined her and found considerable albumen. I then put her upon nitroglycerine, one drop doses three times a day with the result that the albuminuria disappeared. At six months the albumen returned, as well as the dropsical condition. She was again put on nitroglycerine, and there remained a slight trace of albumen during her whole pregnancy. She was confined last Tuesday morning; I applied the forceps, delivered her, and she has made an excellent recovery. I might follow this case with another almost similar in history, in which nitroglycerine was used with as good results; but in a third case it did no good. Taking it all in all, however, my experience is that nitroglycerine is one of the best remedies we can use in these circumstances.

DR. CONNELL: Two such cases came under my notice. One showed about ten per cent. albumen; this was at the beginning of the seventh month. In about two weeks I was called to see her in convulsions. In another case was one in which I was called by Dr. Hallock. In this case there was no albumen in the urine. The woman had reached full term and the labor progressed slowly, but favorably; being first labor, of course it was a little tedious. During the second stage, she was seized with a terrific convulsion; during the time we were delivering her, which we

did as quickly as possible, she had three or four convulsions. There was no trace of albumen in her urine.

DR. STEWART: Albuminuria, uræmia and convulsions during pregnancy are invariably ascribed to circulation interferences by pressure of the enlarged uterus. But it is worthy of note that abdominal tumors as large as uterus at term, and occupying the same situation, do not entail these results. How can this be explained? It is to be remembered that pregnancy possesses other means to effect convulsions, namely, through the nervous system. In addition, discrimination is necessary, and all convulsions occurring during pregnancy, labor, and the lying in, are by no means to be ascribed to, and treated as the result of uræmia.

DR. GREEN: April 28th last, I was summoned to see a child six years of age, with typhoid fever. The patient remained ill with the characteristic temperature curves during twenty days. During the last six days cerebral symptoms seemed to predominate, and about the time the fever subsided and the temperature became normal, the child seemed to convalesce rapidly, and seemed cheerful. On the twenty-second day, when I called they told me the child had not spoken during the past night, and had spoken but once since I made my visit the day before. She continued in this mute condition for six days without uttering an audible note. During this time there did not seem to be any unusual delirium, but about twenty-four hours before she began to speak she manifested considerable delirium of rather a cheerful nature. It was on the seventh day she began again to speak, and within forty eight hours she talked again as usual. I think this case is unusual. The child made a good recovery, and is now apparently as well as before the illness.

DR. BUCHANAN: I have seen a case very similar to Dr. Green's. A child seven years old was attacked by typhoid fever, and passed through a typical course of fever lasting four weeks. The child was then unable to speak. It had no other cerebral symptoms whatever. In all other respects the case was an ordinary one. It returned to speech more gradually than Dr. Green's case, but finally completely recovered. I think it was almost a week from the time it began to say individual words until it was able to express its wants.

DR. HUSELTON: I have to report a case of dislocation of the hip-joint. The dislocation was that which is commonly known as the dorsal dislocation. The case had been seen and manipulated by another surgeon, and in the manipulation the head of the bone had slipped into the thyroid foramen, an accident which may happen to any one of us, and which is not so readily reduced. On my third effort I succeeded in dislodging the bone, and it returned to its place

with a snap so loud that I felt certain I had fractured the neck, but was glad to find that I had not. This is the third case of dislocation of the hip I have reduced by manipulation. The first one I had no difficulty with whatever. The second one I also succeeded in reducing without special effort. The patient made a quick recovery in this last case.

DR. McCANN: This is not an uncommon accident in attempting to reduce a dislocation of the hip-joint; in the effort to place the head of the bone in its normal position, unless there be extreme care exercised, it will be thrown into one of the other dislocations. Some years ago a man was struck on the back by a railway train, and sustained a dislocation of the hip, as well as other injuries. When he was brought into the hospital it was not appreciated that he was fatally injured, and an effort was made to reduce the dislocation. The effort most signally failed for a long time; finally the bone slipped into position just as the man was dying.

A post-mortem showed that not alone the fibro cartilage around the periphery of the acetabulum, but a bony section at the superior edge also was fractured off. The specimen was not retained. It would have been of value. A few years ago a child of 10 years was subjected to several efforts at reduction of the dislocation by manipulation. The head of the bone could be thrown into the thyroid foramen, and was apparently reduced, but as soon as the extension was removed there was an immediate reproduction of the dislocation, although a deformity did not exist. After two or three surgeons had made a number of efforts to reduce the dislocation by manipulation, the child was put in bed with extension by a splint, and eventually recovered. I am satisfied that this case—although, fortunately for the child, we had no opportunity to verify the opinion, for she lived—was also a case in which the cartilage, and perhaps some bone had been torn off.

Occasionally, as has been demonstrated by Dr. Murdoch, dislocation which cannot be reduced by the ordinary manipulations will be reduced by a little traction. I remember one in which I was able, by my own unaided effort, catching the foot and pulling powerfully upon the limb, to replace the head of the bone in the socket.

DR. PETTIT: Two cases I saw in the hospital which were reduced by extension. One had been worked with a long time by a half-dozen physicians and attendants, and there was failure to reduce the dislocation. While they were rigging up the rope and pulley arrangement to try, some one grasped the man by the limb, and by no great force, but simply by steady pulling for may be three-fourths of a minute, the bone slipped into place. Since that time I have seen one other case reduced in the same manner after quite a

good deal of manipulation without success, by extension without a great deal of force, but the force being kept up some minutes steadily.

DR. BUCHANAN: I recall a case in which efforts were made to reduce a dislocation of the hip in a railroad man, by, I suppose, five or six competent surgeons, and when they were through, the reduction was unaccomplished, and the opinion was expressed that it must be a fracture of the rim of the acetabulum neck, and that it was impossible to reduce it. Dr. LeMoyne requested to be permitted to put on an extension, and by extension and some little manipulation, not the ordinary manipulation, but manipulation during extension, he reduced this hip-joint. This man was on the point of being returned to bed with his luxation unreduced when the successful attempt was made.

DR. BATTEN: I had a case of dislocation of the hip, and could not reduce it. Dr. Emmerling, Dr. Dickson and Dr. Reiter were present. The bone went into place with a snap under Dr. Reiter's manipulation.

DR. KÖNIG: I would like to ask if it might not be possible that the position of the rent in the capsule has much to do with the return of the bone; where the surgeon is not able to return the bone by the method of manipulation, and where the method of extension is readily followed by reduction of the bone, is not the location of the rent a factor in the case?

DR. McCANN: What I wish to say is, that in the cases of extension, the patient being entirely under the influence of an anæsthetic, completely relaxed, the amount of force used was not great. In my own cases I did not exert a very great force, and it slipped in.

Another method consists in etherizing the patient, laying him on his abdomen on a table, and allowing the limb to hang down over the end of the table. The result is that after a certain length of time the muscles of the abdomen relax, and with almost no manipulation the head of the bone is thrown into its proper position.

DR. HUSELTON: A farmer sustained a simple dislocation of the shoulder. He was taken into the town of Harmony, where two surgeons tried to reduce the dislocation. They failed, and had the man loaded into a spring wagon and sent to my office, with a note asking me to call in some of my friends and attempt to reduce the dislocation, and in the event of a failure, to send him to the West Penn. Hospital. I said I would make an attempt to reduce it myself. I took the patient into my back office, laid him upon the lounge, and standing behind him, I pulled and told him to pull, which he did, and I think the dislocation was reduced in about two minutes. Now these were competent men who failed with this case, and they seemed to have exhausted every effort. Therefore I think we should be very charitable

indeed before we condemn a physician for failure to reduce a dislocation.

THREE CASES OF FATAL PERICARDITIS, WITH AUTOPSIES IN TWO.

DR. LANGE: I wish to report three fatal cases of pericarditis. The first was a large German, previously healthy, with no discoverable hereditary taint except that his mother had died of lung disease at the age of 32. This man was a cooper by occupation, and boasted of his previous excellent health. He presented on examination the usual signs of pericarditis except that of pain. He presented in addition the ordinary signs and symptoms of a slight fever. Pericarditis was suspected in this case, and during the next three weeks under observation it was ascertained to exist. This man died of heart failure on the water-closet. The autopsy showed the heart to be the so-called hairy heart. There were numerous and strong adhesions between the parietal and visceral layers. Other lesions consisting of organized bands from the visceral to the parietal pericardium of from $\frac{1}{4}$ to 1 inch in length, and as strong as the chordæ tendinæ. These must have exerted a potent and pernicious influence upon the contraction and rotation of the organ. Still other bands were free at one extremity, which floated in the very limited amount of effusion. This was a tubercular pericarditis, and nowhere else throughout the body was tubercle discovered.

The second case occurred in an Italian æt. 35, who had a left-sided, lower-lobed croupous pneumonia, accompanied by a pleuritic effusion large enough to require tapping. In the third week, resolution not happening, the pneumonia became purulent, and thus developed the secondary pericarditis. On autopsy the heart was found to be like the first and the effusion to be small. This patient died while sitting on the edge of his bed.

The third case was an Irishman, a very active man, yardmaster at one of the railroads here. He came to my office complaining of shortness of breath, and presented the signs, symptoms and phenomena of a mild fever. He had no pain, little headache, little backache, general malaise, anorexia; in short, all the signs and symptoms of a slight fever, a pericardiac friction murmur, and a tumbling heart, but no enlarged area of cardiac dulness. Dyspnoea was his only complaint. He had had it two months and it was growing. After two weeks he thought himself so well that we could not restrain him. He would leave his bed and go about his room. One Sunday morning he sent for a barber to shave him. He got up, sat on a chair, took the Sunday paper to look it over and fell dead. There was no post-mortem. From repeated physical examinations I believe the conditions would have been found as in the other cases. In pericarditis of gravity, which cases constitute the small minority, there

is one remedy to which we at last arrive. This is digitalis. It is said that digitalis is proper to strengthen the action of the heart. My experience with these cases and others leads me to think that digitalis has very little effect in increasing the power of the heart in pericarditis.

Another point is that death from pericarditis, which is usually ascribed to the size of the effusion when it is large, may be due rather to interference with the action of the heart by adhesion. It is my opinion that the latter is frequently, and that large effusions are rarely, the cause of death. Large effusions belong rather to those inflammations of the pericardium which complicate rheumatism and nephritis, and which are not fatal. When the effusion is large, what can we expect from digitalis? The interference in this case is not with contraction, but with the filling—the diastole of the heart; and this being purely a muscular relaxation is uninfluenced by digitalis. The only effect, then, that we should expect, is that which would happen under the administration of digitalis in, for instance, the granular degeneration of typhoid fever, pneumonia, or any disease of gravity and duration; and this, it must be confessed, is little. The effect, indeed, would be less, for even if the systole should be improved by digitalis, the diastole cannot be, and consequently the intra-arterial tension is not increased. On the other hand, if the adhesions constitute the obstacle to efficient contraction, we can understand how an increase of power in systole by digitalis might fracture, tear off, or free the parietal from the visceral pericardium, and thus allow an increased quantity of blood in the arterial system. But I have not observed this to happen, and the administration of digitalis for pericarditis is pregnant with disappointment, and is in striking contrast with its effects in heart dilatation.

DOMESTIC CORRESPONDENCE.

It was Diphtheria that Killed them, in Montmorency and Otsego Counties.

To the Editor:—The outbreak of dangerous disease which has prevailed in Otsego and Montmorency counties since last spring, and which local physicians said was not diphtheria, and permitted two of the corpses to be sent to Lapeer county, where a case of diphtheria occurred in a person who viewed the remains, has been investigated by the State Board of Health, the investigation having been requested by a union meeting of the boards of health of three townships in those counties.

Prof. Vaughan, of the University, a member of the State Board of Health, went and made the investigation. He has also made bacteriological ex-

aminations of the membrane from the throats of two of the patients, and has found and propagated the microörganisms which are believed to cause diphtheria. This species of microörganism is known as Löffler's bacillus. Prof. Vaughan says: "The bacilli have been compared with the Löffler bacillus, which I had obtained in the laboratory of Dr. Koch, at Berlin, and the identity of the two cannot be questioned." He reports the disease to be unmistakably diphtheria, as proved by symptoms, physical signs, throat paralysis, etc.; and the diagnosis is sustained by the bacteriological examination. It is now hoped and expected that the local authorities will take thorough measures, and stamp out the disease.

HENRY B. BAKER, Secretary.

Office of the State Board of Health, Lansing, Mich.,
July 22, 1890.

Medical Education.

To the Editor:—I notice the articles in regard to medical education in *THE JOURNAL*. Those editorials, so far as their influence upon the action of this Board is concerned, are of no weight; the Board will not recede from its position. When the time comes the Board will increase its requirements. The rule of three courses of lectures before graduation is already assured of general observance. You have doubtless noticed, too, that by the new law of the State of New York, which goes into effect September, 1891, examinations of medical students will not be held unless candidates have first taken three annual courses of lectures. Such legislation, and support from colleges and medical men, encourages the Board to maintain a strict adherence to its requirements, as published.

Very truly yours,

JOHN H. RAUCH,

Secretary Illinois State Board of Health.
Springfield, Ill., July 2, 1890.

American vs. European Medical Education.

To the Editor:—In the admirable and timely paper read before the Section on State Medicine, under the title of "American Versus European Medical Education" (*vide* No. 3, Vol. xv, of *THE JOURNAL*), the author, Dr. Samuel O. L. Potter, unintentionally no doubt, does an injustice to the Medical Department of the University of Georgetown, by placing this school in class second of the four comprising his classification (p. 85, loc. cit.).

This school should stand in his first class for the following reasons:

1. It requires a preliminary examination as a condition for admission.
2. It adopted a three years' graded course in 1878, which it has never abandoned.
3. It requires attendance upon three full courses

of lectures, of seven months each, in all branches, as a requirement for graduation.

4. The graded classes are required to pass a satisfactory examination before being advanced to the class above.

5. It gives full clinical instruction in the general and special branches.

All this is set forth in the annual Announcement, and strictly adhered to by the Faculty. Since the adoption of the three years' curriculum, the Faculty has had every reason to be satisfied with the progress of the school, and has never felt inclined to return to the unsatisfactory and inadequate two years' courses of study. Respectfully,

C. H. A. KLEINSCHMIDT, M.D.,

Professor of Physiology, Medical Department
University of Georgetown.

Washington, D. C., July 20, 1890.

BOOK REVIEWS.

HOW TO EXAMINE FOR LIFE INSURANCE. By JOHN M. KEATING, M.D., President of the Board of Life Insurance Directors, etc. Philadelphia: P. Blakiston, Son & Co. 1890.

This is an octavo of two hundred pages, well adapted to fulfill the purpose for which it is published, namely, to give concise and reliable instruction as to the proper methods of making examinations of applicants for life insurance. Part first of this work contains a terse and practical dissertation upon physical diagnosis, upon the habits and developments of those examined, that should be made matters of special observation. In the second part we have the special instructions of some twenty or more of the leading insurance companies as they are issued to their medical examiners. Thus there is here given in concise form, the combined wisdom of those who have made this subject a specialty. The volume is well worth a careful study by those who are called upon to make examinations.

THE SURGERY OF THE KIDNEYS; being the Harveian Lectures, 1889, by KNOWSLEY THORNTON, M.C., Surgeon to the Samaritan Free Hospital, etc. London: Charles Griffin & Co., Exeter street, Strand. 1890.

This is a valuable little work of 100 pages. It is a reprint of three lectures delivered by the author in 1889 upon the important subjects of renal pathology and renal surgery. In the first lecture the difficulties are considered in early diagnosis, as to whether a case is medical or surgical. The anatomical positions and relations of the kidneys are carefully considered; malformations, displacements, congenital and acquired, are described; the etiology, pathology, symptoms and treatment of hydro-nephrosis, pyo-nephrosis,

pyelitis, pyelo-nephritis and renal abscess are concisely stated. Renal calculus is next considered, and the history of the operation for its removal, the steps of the procedure, and the treatment of the wound.

The first part of the second lecture is devoted to the pathology and treatment of cystic formations. In the second portion, directions are given for the performance of nephrotomy and nephrectomy. Then follows a statement of the conditions in which the author would restrict the use of puncture, and in which he would restrict the operation of nephrotomy.

The third lecture treats of renal tumors, their pathology and treatment; closing with a description of the steps of procedure in abdominal nephrectomy. To those who are specially interested in renal surgery this little volume will prove a valuable addition to the literature which they already have on hand.

NEGROLOGY.

Henry Holmes Longstreet, M.D.

Dr. Henry Holmes Longstreet, who died at Bordentown, N. J., July 6, in his 71st year, was a man of mark in his community and the medical history of his State. He was a director in the banking, gas, water and other companies developing the resources of Burlington County, in which he settled for medical practice directly after his graduation, from the College of Physicians and Surgeons, in 1842, and where he filled out nearly half a century of energetic usefulness.

DR. A. EUGENE FALKEN, aged 41 years, was killed by the cars in Bridgeport, Conn., July 17, 1890.

DR. EDWARD G. O'MALLEY, of Wilkesbarre, Pa., was thrown from a horse while out riding in Aspen, Col., July 19, 1890, and was instantly killed. He was at one time Coroner of Luzerne county. He was 33 years of age, and was born in New Haven, Conn., where he resided until within a few years. He graduated in 1881 from the New York University Medical College.

DR. SAMUEL B. MCCLELLAN, a former resident of Hudson, N. Y., recently died in Kenosha, Wis., at the age of 84 years.

DR. JAMES D. STRAWBRIDGE died suddenly at his home in Danville, Pa., July 19, 1890. He was born in Montour county, Pa., in 1824, and graduated from Princetown College, and in 1875 from the Jefferson Medical College of Philadelphia. He served through the late war, was captured while serving as Medical Director of the Eighteenth Army Corps, and spent three months in Libby prison. Dr. Strawbridge represented

the Thirteenth Pennsylvania District in the Forty-third Congress.

DR. DANIEL WELLS, aged 75, died at his residence in Newburgh on July 11, 1890. He was educated in New York, where he was once a Police Surgeon under the municipal government.

DR. JAMES R. MATTHEWS, long a successful practicing physician at Bloomville, N. Y., died July 13, 1890, aged 45 years. He was graduated by the Albany Medical College in 1871.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 26, 1890, to August 1, 1890.

Capt. Curtis E. Price, Asst. Surgeon U. S. A., is granted leave of absence for ten days. With the approval of the Acting Secretary of War. Par. 3, S. O. 175, A. G. O., Washington, July 29, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 2, 1890.

Asst. Surgeon N. J. Blackwood, ordered to duty in the Bureau of Medicine and Surgery.
Medical Director P. S. Wales, ordered to duty in charge of the Museum of Hygiene.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending July 26, 1890.

Surgeon P. H. Bailhache, granted leave of absence for seven days. July 26, 1890.

Surgeon W. H. Hutton, to proceed to Chicago, Ill., on special duty. July 24, 1890.

Surgeon John Godfrey, granted leave of absence for thirty days. July 21, 1890.

P. A. Surgeon C. T. Peckham, when relieved at Memphis, Tenn., to proceed to St. Louis, Mo., and assume command of the Service. July 9, 1890.

P. A. Surgeon S. C. Devan, granted leave of absence for twenty-five days. July 15, 1890.

P. A. Surgeon P. C. Kallloch, orders of July 5, to St. Louis, Mo., revoked. July 8, 1890.

P. A. Surgeon L. L. Williams, relieved from duty at Baltimore, Md., and to assume command of Service at Memphis, Tenn. July 8, 1890.

Asst. Surgeon T. B. Perry, to proceed to Baltimore, Md., for temporary duty. July 17, 1890.

Asst. Surgeon J. B. Stoner, granted leave of absence for thirty days. July 21, 1890.

Asst. Surgeon S. H. Hussey, to proceed to Pittsburgh, Pa., for temporary duty. July 18, 1890.

Asst. Surgeon G. B. Young, granted leave of absence for fifteen days, on account of sickness. July 12, 1890.

Asst. Surgeon W. G. Stimpson, to proceed to Buffalo, N. Y., for temporary duty. July 12, 1890.

Asst. Surgeon E. R. Houghton, to report to the Medical officer in command, New York Marine-Hospital, for temporary duty. July 14, 1890.

PROMOTION.

P. A. Surgeon G. M. Magruder, to rank as such from July 12, 1890.

APPOINTMENTS.

Asst. Surgeon E. R. Houghton, to rank as such from July 12, 1890.

Asst. Surgeon A. L. Benedict, to rank as such from July 24, 1890.

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ORIGINAL ARTICLES.

CALOMEL AS A DIURETIC.

Read in the Section of Practice of Medicine, Materia Medica and Physiology at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., June, 1890.

BY GEO. A. FACKLER, M.D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS AT CINCINNATI WOMAN'S MEDICAL COLLEGE.

The purpose of this paper is to briefly present to the notice of the Section a subject which may be of interest to the general practitioner. Its purpose is to call attention to a remedy for the relief of a condition which is frequently a source of annoyance to the medical adviser. Although they do not form the larger portion of cases, still every one has his fair quota of diseases of the heart to attend, and no complication of these affections is as unsatisfactory to treat as the oedema. Hence, any contribution to the literature of this subject, it seems to me at least, should not be allowed to pass unnoticed. Such contributions have appeared in our journals during the past three or four years and, hence, it may be profitable to bestow more than a passing glance at the observations of the original investigators of the action of calomel as a diuretic.

In 1884, Dr. Ernst Jendrassik, assistant at the clinic of Professor Wagner, in Budapest, had under treatment a severe case of dropsy, due to disturbance of circulation. With the consent of Wagner, and under the supposition that the affection might be of a syphilitic nature, he ordered inunctions of unguent. cinereum. Subsequently, in order to accelerate the action of this remedy, he administered to the patient small doses of calomel in combination with jalap. Within two days of the adoption of the latter course of treatment, the quantity of urine voided was increased to such a degree as to cause a disappearance of the dropsy within a few days. A few weeks thereafter the dropsy returned, but yielded as readily to the same treatment. Further investigation convinced Jendrassik that this action could be ascribed solely to the calomel. A report of his observations was published toward the end of 1885 in a Hungarian journal, but seems to have attracted no special attention until a more extensive review of his ex-

periments appeared in the *Arch. f. Klin. Med.* in 1886, and a confirmation of his statements by Stiller in the *Wiener Med. Wochenschrift* of the same year. "Although the diuretic action of calomel as an adjuvant to others had been observed by some of the older authors, yet it was considered very inferior to those which our experience has proven to be almost valueless, and nowhere are we able to find that stress laid upon its effectiveness such as the experiments of Jendrassik and others demonstrates it possesses. In modern text books its diuretic action is entirely ignored, and only on account of its purgative properties is it recommended in dropsy. The results obtained by those who have made careful and numerous observations with calomel have created a great amount of surprise, especially since it is an agent which formerly had been so extensively employed. Although within the past five years it has again come into more general use, even as a purgative in dropsy, and yet its *par excellence*, diuretic action, remains unnoticed.

"After a perusal of the older text-books, nothing seems less difficult than to remove a dropsical fluid from the body, since the remedies known as diuretics are almost innumerable. But as is the rule in therapy, the number of remedies recommended for the relief of a certain condition is in inverse proportion to the number of good results obtained therefrom. The larger portion of this class has been eliminated from general use, and the remainder, digitalis excepted, are simply employed for want of better."

As stated above, Jendrassik's discovery was an accident. It may be interesting, then, to briefly review his subsequent experiments, the brilliant results of which led him to publish his paper upon the subject. In it he describes at great length seven cases observed in Wagner's clinic. All of the patients suffered with distinct cardiac lesions, and in all cases other diuretics had been previously employed without avail. One factor, alone, detracts from the value of these observations, and that is the fact that he administered calomel in combination with jalap.

He does not fail, however, to discuss the question as to which of the two the diuretic action should be ascribed to.

He attempted to obtain the same results after

the omission of calomel, but quickly returned to the combination when he found the diuretic action ceased and the condition of the patient became aggravated. In the first case the inhibition of the calomel-jalap powders produced profuse diuresis within three days. About four weeks thereafter jalap alone was given, but no increase in the amount of urine was noted. Two days use of the calomel-jalap powder, however, brought on a diuresis that speedily doubled the amount of urine voided.

In twenty-four experiments upon six different patients the amount of urine was increased in twenty-three. As a peculiar feature it was observed that the polyuria began two or four days after the beginning of the treatment. The increase is rapid. The maximum discharge in the majority of cases occurred on the second day of the polyuria. From that period the amount gradually decreased until within five days to two weeks the normal standard was reached.

The degree of the diuresis depended upon two factors: the size of the dose administered and the amount of the existing dropsy. Jendrassik found that as a rule 0.20 or grs. iij, given three times a day, produced the desired effect. This may vary somewhat, depending upon the facility with which the remedy is absorbed.

As is well known, calomel as such, is insoluble, and only as an albumate can it be absorbed. The process of this chemical combination differs in different individuals and under different circumstances. It was noticed that the diuretic effect would only take place when evidences of its absorption became manifest, *i. e.*, metallic taste, increased salivation and stomatitis.

It is important to consider the interval that elapses between the beginning of treatment and the inception of the diuresis. Jendrassik, at first, thought this due to insufficient dosage, but subsequent experiments convinced him that it was useless to increase the dose or continue the calomel until the diuretic effect became evident. Its administration for one or two days will produce polyuria, after a proper lapse of time, as effectually as if given during the intervening days. Again, calomel given during the stage of diuresis did not prolong it. In the majority of cases it was observed that if the dose was of the proper size, the diuresis continued until the oedema had entirely vanished.

Jendrassik found it difficult to explain the action of calomel as a diuretic. In cardiac lesion, during the stage of depraved compensation, it has been only possible, with the agents at our command, to cause increased diuresis with such agents as will invigorate the heart's action. Upon this property depends the action of digitalis and caffeine. Under no circumstances will these remedies yield such pronounced beneficial results as calomel. Judging

from our experience with cardiac stimulants, what an enormous increase in the heart's force would be demanded in order to cause such an increase in the urine voided as was obtained by Jendrassik, *i. e.*, an increase from 7-800 ccm. one day, to five litres upon the next, and eight or nine litres on the following.

Indirectly the calomel exerts a beneficial influence upon the heart, in that it removes the general oedema and causes improvement in the general condition. It is found that in three cases sleep is restored, the appetite improves, and in consequence thereof other cardiac compensation is, to a certain degree, restored.

Jendrassik supposed, at first, that calomel acts upon the kidneys, stimulating them to increased secretion, in consequence of which there is an increased absorption of the dropsical fluid. Not being able to produce polyuria by calomel in the healthy individual, he discarded this theory. He then supposed its effect to a property of absorption on the part of the blood, which the remedy might produce.

Rosenheim experimented not only with calomel, but other preparations of mercury, and extended his observations to liver and kidney affections. He found calomel to be the most reliable, and praised it as "indicative, especially in dropsies due to heart disease, with or without complications on part of the kidneys." As an objection he urges its transitory effect, and the detriment which mercurilization may cause in the general organism. Meyjes, after observations in fifteen cases, recommends calomel as a powerful adjuvant to digitalis and as a great contribution to the therapy of disturbances of circulation. He found it useless in renal dropsies. In like manner Paul Terray and E. Biro substantiate the statements as to the eminently diuretic action of calomel in cardiac lesions.

All observers, with the exception of the latter, found it of value in some cases of cirrhosis of the liver. Rosenheim advanced as a theory that the point of attack of the remedy may be sought for in the oedematous tissues. According to his views, the mercury, which he detected in the exudations, caused a contraction of the tissues, and a consequent expressing of the fluids into the circulation.

Stintznig undertook a series of experiments to find a satisfactory explanation of the diuretic action of calomel. He treated in all twenty-seven patients, twenty-one with, and six without dropsy. In thirteen of these former, complete success was obtained, and in eight only partial or none. Eighteen of his cases suffered with heart lesions, and in three the dropsy was due to cirrhosis of the liver.

No one has made more valuable and exact observations than Stintznig upon his cases. He presented a voluminous report of details and re-

sults in each case. They may be summed up as follows:

1. Calomel is a diuretic which acts more energetically than any other known diuretic. The diuretic properties are manifested to a lighter degree in the normal state, and to a very pronounced degree in certain forms of dropsy.

2. Its diuretic action is most marked in dropsies due to cardiac lesions, whether on part of the valves or muscular tissue. It will only fail partly, or entirely, in which ruptured compensation has attained an unusual degree, in which case, however, no other remedy is effectual. Other forms of dropsy, especially that of renal origin, are less amenable to treatment with calomel.

3. A certain proportion of its good effects may be ascribed to the occasional diarrhœa, but even when calomel is given with opium to check the diarrhœa, polyuria is established.

4. Its beneficial effect upon the general condition is marked.

5. The undesirable complications, as salivation, stomatitis, diarrhœa, etc., may be counteracted by the proper prophylactic and remedial agents.

6. The appropriate dose is that recommended by Dr. Jendrassik, about 0.2, but given alone or with opium.

7. The beginning of increased urination occurs on the second to fourth day; rarely delayed until the fifth. Polyuria continues for at least three, generally four or five, and occasionally as long as twelve days.

Stintznig excludes any direct action of the remedy upon the heart or blood vessels. Never has he observed an improvement in tone or frequency of the pulse, until after subsidence of the œdema. Thirst was never marked, hence the diuresis cannot be ascribed to copious administration of water. He also excludes Rosenheim's theory. But two remain: That of Jendrassik and Stiller, who believe that the effect is due to absorption on part of the blood of the exuded fluids, or that suggested by Furbinger, that on part of the blood there takes place stimulation of the epithelium of the kidney. In favor of the first we may suppose the formation in the blood of a body possessing hygroscopic properties. Against the latter it may be urged that, according to most observers, no diuretic action takes place in non-dropsical cases. Yet Stintznig claims, that since he did, by means of small doses of calomel, excite diuresis in the latter cases, he was inclined to adopt Furbinger's theory.

I would here take the opportunity of first presenting a case, which had been under my observation for some time, and which illustrates the foregoing remarks:

Case 1.—Without entering into the previous history of the case, except to state that no specific

history could be obtained, I will describe the patient's condition as it was presented to me on February 26, 1889. There existed mitral insufficiency, with hypertrophy of the left and dilatation of the right ventricle. Liver enlarged, considerable ascites and extensive œdema of the lower extremities. Pulse not very rapid, but bounding. Complained of dyspnœa.

Patient was at first placed upon infus. digitalis, but the only improvement after five days treatment was in respect to respiration and sleep. Citrate of caffein was substituted for digitalis, and although this caused a slight increase of the amount of urine voided, the dyspnœa became more troublesome, so that we returned to digitalis. Thus various remedies, but as a rule digitalis, were given for about two weeks, when I determined to try calomel.

March 16, three doses of calomel, 4 gr. each, were administered. This was followed by copious alviul discharge and relief of dyspnœa. No change was observed in the urine, of which patient passed less than one quart in twenty-four hours.

March 17. Again three doses of calomel were administered, but combined with morphia in order to prevent inordinate action on part of the intestines. This was followed by two alvine discharges. No change in urine. The same procedure was adopted March 18. No calomel given on the following day.

March 20. Suddenly, about 7 P.M., profuse diuresis began, so that within twenty-four hours patient passed $4\frac{1}{2}$ quarts of water. Its specific gravity fell from 1,019 to 1,007. Polyuria continued until March 25, when it was found that the œdema had almost entirely disappeared; no dyspnœa; general condition markedly improved. Salivation was marked, but easily controlled, as were also symptoms of stomatitis after cessation of treatment.

Patient returned April 15th with similar symptoms, but to a less degree of severity than when first seen. The calomel treatment was again instituted and acted just as powerfully as before. But one difference was noticed, and that was that the polyuria began on the fifth day and lasted one week. Patient remained under observation until May 6, when he left the city and has not been heard of since.

In this case calomel was so administered as to determine whether any diuretic action was possessed by it. It was not combined with jalap, as by Jendrassik, since jalap in all probability, by increasing peristalsis, accelerates the elimination of calomel. The latter can act as a diuretic only if absorbed in the shape of an albuminate; hence, it should be our object to retain it as long as possible, in order to effect this change. With this object in view it was, according to instructions of Stintznig and others, combined with morphia.

This case, then, would present strong evidence toward the value of calomel as a diuretic.

Case 2.—A. M., laborer, came under observation Oct. 2, 1889. Six months previously had suffered, for a period of one month, with dyspnoea and cedema of lower extremities. These symptoms returned August 15, 1889, and gradually increased in severity. Present condition: Extensive anasarca of lower extremities, enlargement of right ventricle, systolic murmur at apex, enlargement of liver, some abdominal ascites, traces of albumen.

Oct. 2. Urine voided, two pints.

Oct. 3. Urine voided, one and one-half pint; three doses of calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

Oct. 4. Urine voided, two pints, three doses of calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

Oct. 5. Urine voided, five pints; three doses of calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

Oct. 6. Urine voided, ten pints; three doses of calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

Oct. 7. Urine voided, nine pints; no calomel.

Oct. 8. Urine voided, ten pints; no calomel.

Oct. 10. Urine voided, six pints; no calomel.

Oct. 11. Urine voided, eight pints; one dose of calomel, gr. iv.

Oct. 12. Urine voided, four pints; no calomel.

Oct. 13. Urine voided, five pints.

Oct. 14. Urine voided, six pints.

Oct. 15. Urine voided, four pints.

After this date, gradual approach to normal amount. During the treatment the cedema had vanished, specific gravity of urine falling from 1,020 to 1,008 at times. Disappearance of albumen; all symptoms improved. Patient, as a rule, had two fecal evacuations a day, and on but one day were they increased in number to 5. Slight salivation and stomatitis.

Case 3.—A. B., lady school-teacher, 45 years of age, came under observation March 15, 1890. Symptoms: Dyspnoea, slight cedema of lower extremities and genitalia, very slight increase in cardiac area of dulness toward left side, rapid heart's action, systolic murmur, scarcely appreciable ascites, no albumen.

March 15. Amount of urine, less than one pint; specific gravity, 1,022; three doses calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

March 16. Amount of urine, less than one pint; specific gravity, 1,021; three doses calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

March 17. Amount of urine, one pint; specific gravity, 1,021; three doses calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

March 18. Amount of urine, one and three-quarters pints; specific gravity, 1,016; three doses calomel, $\bar{a}\bar{a}$ gr. iij, with morphia.

March 19. No calomel, severe stomatitis; amount of urine, two pints; specific gravity, 1,015.

March 20. Amount of urine, one and a half pints; specific gravity, 1,014. No calomel.

March 21. Amount of urine, two and a half pints; specific gravity, 1,010.

March 22. Amount of urine, four pints; specific gravity, 1,010.

March 23. Amount of urine, five pints; specific gravity, 1,008.

March 24. Amount of urine, eight pints; specific gravity, 1,006.

After this date daily amount grew gradually smaller, but never below the normal. Patient discharged April 16. No return of cedema. The appearance of diuresis in this case was relatively late, viz., eighth day.

Case 4.—L. O., man, 29 years of age, Case seen in consultation. Slight cyanosis, pulse 104, small and irregular; perceptible venous pulsation in cervical region, systolic murmur, great cardiac hypertrophy, extensive ascites, liver enlarged, no albumen, anasarca. Saw patient April 2, 1890. Was passing about one pint of water per day; specific gravity, 1,025. Calomel administered for a period of four days made not the slightest impression upon the urinary secretions or cedema, and, therefore, no alleviation of symptoms. Besides this a halt was called to the treatment by the severe diarrhoea and stomatitis. Indications for digitalis and camphor appeared. Patient died May 8.

This case illustrates the fact that in the last stage of cardiac insufficiency the diuretic action of calomel can not be depended upon. In this case all remedies as digitalis, pilocarpin, caffeine, baths, etc., had proven unavailing in the hands of the attending physician.

Before closing, it may be well to state that experiments have been and are being instituted as to the diuretic action possessed by other mercurial compounds. Thus far, testimony as to their value is rather conflicting, although some, among them Bièganski, claim that, administered hypodermically, mercurials, especially the bichloride, will act more promptly than calomel.

From the reports thus far presented, we may safely conclude that:

1. Calomel, and in all probability other mercurial compounds, possess diuretic properties.

2. If given in proper dose, the effect of calomel becomes evident in two to ten days. Continuance of the treatment during the diuresis will not alter or increase the effect.

3. Its action is most marked in dropsies due to heart disease. Its action in dropsies of hepatic origin is not to be relied upon. Pathological changes in the kidney prevent or abridge its action.

4. Small doses will prove of no avail.

5. The diuretic action may, in all probability, be ascribed to the irritating effect which the mercury, during its elimination, exercises upon the renal epithelium.

FURTHER OBSERVATIONS UPON FOOT-AND-MOUTH DISEASE IN ITS RELATION TO HUMAN SCARLATINA AS A PROPHYLACTIC.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY J. W. STICKLER, M.S., M.D.,
OF ORANGE, N. J.

On December 1, 1887, a paper upon the above subject was read in the presence of, and discussed by, the New York Academy of Medicine. Since that time I have obtained from Dr. M. K. Robinson, of Dover, England, additional statistics which he has secured for me at considerable personal inconvenience, and which are, I think, of sufficient interest, to quote in connection with what has already appeared in relation to the matter under consideration.

First, let me review enough of my former paper, to present clearly the subject as we are now to consider it.

During the early days of February, 1884, a remarkable outbreak of sore throat occurred in Dover, England, which was due to the drinking of milk obtained from cows affected with foot-and-mouth disease. During the week ending February 9, 205 persons were attacked with the disease. "The majority of persons who suffered during the Dover epidemic presented two prominent symptoms in common, viz., inflammatory sore throat and enlargement of the lymphatic glands," but the lesions produced varied considerably in different cases. The vesicular eruptions were followed either by a raw red, oedematous appearance of the mucous membrane, or white patches, and the ulcers which supervened, assumed in many instances a chronic character, with thick puckered edges, and were a long time in healing.

When the inflammation of the tonsils went on to suppuration, recovery was much slower than after common quinsy, and the enlarged cervical glands remained tender, red, and swollen, long after the throat symptoms had subsided, *resembling, in this respect, the sequelæ of scarlet fever.* (I am quoting now from Dr. Robinson's original paper on the Dover Epidemic). Erysipelas and purulent formations were concomitants, also, of the epidemic. "In some instances the feet of those who suffered, were swollen and painful, simulating rheumatism.

"A fatal termination resulted in the cases of two children, who had very bad throats and mouths, with the extension of the disease, in one case, to the respiratory tract, their deaths being, in the opinion of the medical attendant, due to the poisonous effects of the milk." "Two persons who labored under chronic kidney disease, were respectively attacked with sore throats and died on the same day; other people in the

same houses suffering, also, from the 'epidemic sore throat.'" "A servant girl was attacked on February 4, with sore throat and pain in the limbs, complained on the 8th of great pain in the epigastric region, and dyspnoea. There was a purple-red patch on the left cheek, extending to the nose. At 3 P.M. on the 9th, she passed into a state of coma, and died at 4 P.M." "Mr. Wood says this was an obscure case, but thinks it possible that it was one of blood poisoning. Being in England, in 1886, to investigate this unusual epidemic of sore throat, and wishing, if possible, to learn what relation, if any, it bore to scarlatina, I went to Dover to consult with Dr. M. K. Robinson. He received me very kindly, and said he would go with me to the various homes where the disease had existed, that we might gain the desired information."

The following facts were elicited:

1. That members of eight different families who had previously had scarlet fever, escaped the "throat epidemic" while all the other members contracted the disease, all alike having partaken freely of milk infected with the contagium of "foot-and-mouth disease." The number of those who escaped was 23+. I say plus 23, because in the case of one family, we were told that the father, mother and servants escaped, the number of servants not being stated. Allowing the number of servants to be two, the whole number would be twenty-five.

2. That of 183 persons who had the "throat epidemic," sixteen had had scarlet fever.

3. That four of the sixteen persons who had had scarlet fever, had a *mild form* of the "throat epidemic."

4. That two of the affected individuals had scarlatina *when young*.

5. That *none* of the persons affected with the "throat epidemic," had contracted scarlet fever from natural, accidental exposure, between the time of having the "sore throat" and the date of my visit (1886).

At this point, and in close connection with what has just been stated, let me quote *in extenso* the paper recently received from Dr. Robinson, the one alluded to in the first few lines of this article. It is as follows:

Dear Dr. Stickler:—I have at last been able to complete the further inquiry which you asked me to make, and beg to furnish you with the information sought for, which you may consider more complete than my previous communication to you upon the subject. The following summary has been compiled from statistics containing all the information procurable, concerning the epidemic of 1884:

Number of cases of foot-and-mouth disease which came under observation during an epidemic of this disease, at Dover, Eng., in 1884	205
Number of persons attacked who had previously suffered from scarlet fever	23
Number of persons attacked, who had <i>not</i> previously suffered from scarlet fever	161

Number of persons who, having had scarlet fever and imbibed infected milk, *escaped* foot-and-mouth disease 36¹
 Number of persons who had foot-and-mouth disease in 1884, since exposed to scarlet fever without contracting the disease 14

With regard to the prevalence of the disease in Great Britain, it does not appear to have been worthy of recognition in our official nomenclature of diseases, and it has escaped notice by the leading authors of our text-books on medicine. When my interest in this disease, as developed in the human subject, was aroused, I had to resort to veterinary practitioners and veterinary works, in order to obtain descriptions of the symptoms, and history of the malady. I am not surprised, therefore, that Sir James Paget should write to you, to the effect that he was not aware of the existence of the disease, when it fails to find a place in British nomenclature and teaching. It is now twenty years ago, when Medical Officer of Health for the Borough of Leeds, that a distinct epidemic of this disease came under my notice. It was confined chiefly to children who had partaken of milk from cows suffering from this disease, and the symptoms in the human subject were most characteristic. Since that time *limited* outbreaks have, from time to time come under my observation, which, although clear to my mind as to their nature and origin, were *limited in point of number of cases on each occasion*.

Then came the sudden and wide-spread diffusion of the disease in Dover, which, with considerable labor I was able to trace so clearly to its source, that I felt it my duty to bring the matter before the medical profession, and place on record, the facts then elicited.

When the history of this last mentioned epidemic obtained notoriety from its publication in the daily papers, I had many communications on the subject, from persons who had evidently sustained practical experience of the disease, but the nature of which had escaped recognition at the hands of medical practitioners. Thus, Captain Reid, of Backsford House, Ashford, says in a letter to me, "some few years ago whilst staying at a fashionable watering place, my children were poisoned from milk, which I ascertained for certain, was derived from a cow suffering from foot-and-mouth disease. I at once recognized the disease, because on a previous occasion five of my household had suffered from drinking the milk of a cow belonging to myself which was afflicted with the disease."

Another gentleman told me that being thirsty, he went into his cowshed and drank off a glass of milk just yielded from one of his cows, which he found afterwards was ill at the time, and subsequently pronounced by the veterinary surgeon, to be suffering from foot-and-mouth disease. This gentleman was attacked with bad mouth and throat.

Another gentleman said: "When my cows suffered from the disease, my man along with his wife and family, would persist in drinking the milk from the diseased animals, and they were all attacked with the malady. The Messrs. Crowhurets, veterinary surgeons, wrote me, saying that when attending upon animals suffering from foot-and-mouth disease, the attendants upon such animals had often complained of the same symptoms which were exhibited by the animals in question, etc."

The disease as it occurs in animals, has been variously described as eczema, epizootic, aphthous fever, epizootic aphtha and murrain, and is characterized by fever and a vesicular eruption in the cleft of the hoofs, or in the mouth, with extension into the throat and nostrils. Shivering, and a ropy discharge from the nose, are often noticed at the onset of the attack. When the vesicles are ruptured, ulcers form, or red spots, bare of epithelium, appear with the characteristic soreness which ensues.

¹ This number includes persons other than families in which the disease broke out, but who obtained the same milk supply.

The incubation period varies, but animals have been known to suffer twenty-four hours after exposure to infection. Various complications occur, and erysipelas and pyæmia have been known to supervene.

The following characteristics were noticed in the human epidemic which occurred at Dover: Shivering, followed by headache and fever, pains in the limbs, thirst, parched lips and a vesicular eruption on the throat and mouth. A common accompaniment was enlarged cervical glands; many had enlarged tonsils, in some instances, proceeding to suppuration.

In the *Veterinary Review*, Vol. IV, p. 502, and Vol. V, p. 187, will be found some evidence furnished by Dr. Balfour and Mr. H. Watson, on the transmission of foot-and-mouth disease by milk to man, and in the same periodical (Vol. V, p. 81) Mr. Hislop records some instances of human beings taking the disease by inoculation. Parkes in his "Practical Hygiene," says: "There has been much discussion whether the milk from cows with foot-and-mouth disease causes affections of the mouth, etc., in human beings. There are some striking cases which seem sufficient to prove that diseases of the mouth, aphthous ulceration, general redness, diphtheritic-like coating, and swollen tongue occur. In the proceedings of the Royal Society for 1881, a new form of febrile disease is described by Dr. Ewart, the propagating agent being milk from a dairy near Aberdeen."

Gamgee, the eminent veterinary surgeon, says that the disease is communicable to man, as the history of the various outbreaks of the disease undoubtedly prove. I have referred in detail to the above mentioned symptoms as observed by reliable narrators, because I am satisfied that many *ill-defined throat affections* are due to bovine sources.

During epizootic epidemics, I have, again and again, noticed the concomitant prevalence of aphthous affections and diphtheritic-like appearances, described often under the heads of follicular stomatitis and follicular tonsillitis.

Dr. C. Fox described a peculiar epidemic, characterized by inflammation of the tonsils, extending into the pharynx, and sometimes to submaxillary and cervical glands, and accompanied by yellowish patches on the throat.

This outbreak occurred in October and November, 1875, in a parish which differed from its neighbors in this, that the inhabitants were supplied with water from a stream polluted at various parts of its course by the drainage of farm yards, the inference being, that the specific poison was derived from the infected excretions of cattle.

That some intimate relationship exists between scarlet fever and diphtheria, appears to be extremely probable, my own view being that diphtheria can be produced by the pabulum on which the scarlet fever poison exists, during the interval between its passage from one human subject to another. I have known instances where diphtheria has broken out at isolated spots in the country, when, after diligent search, no exposure to any previous case of diphtheria could be traced, but where I know that scarlet fever had previously occurred, and that those who suffered from diphtheria had been exposed to exhalations from scarlet fever infected excretions.

Again, it is the custom in many parts of England, to cart town refuse and garbage into the country, and there may be witnessed the disgusting spectacle of swine feeding upon the scavenger's motley collection, including as such heaps do, not only decaying vegetable and organic matter, but rags and poultices from hospitals and sick-rooms.

Many times has swine fever (which some maintain is allied to scarlet fever) broken out amongst pigs kept as above described, and I have also noticed that in the same locality, the *swine fever* has been accompanied by *foot-and-mouth disease amongst the cattle*, but what is far more important, *human beings that have consumed milk*

from the infected cattle, have suffered from diphtheritic-like affections of the throat. It is a striking fact, that in certain localities where foot and mouth disease has prevailed, there also has there been a large development of diphtheria or its congeners.

The cases of foot-and-mouth disease officially reported in England, increased from 37,000 in 1882, to 461,000 in 1883, and following this enormous increase of the epizootic disease, there was a large increase in diphtheria. The number of deaths alone from this disease, in England and Wales during the first quarter of 1884, being 1,270, and the death-rate from the malady higher than that recorded in any quarter of the previous fourteen years. The above observations I have not published, but you are at liberty to make any use of them you think proper. Believe me,

Yours faithfully,

M. K. ROBINSON.

In immediate connection with this letter, and the statistical table already given, let me call your attention to the facts concerning an outbreak of foot-and-mouth disease in Bethersden, England, in 1884. They are as follows in tabulated form, namely :

No. of Cases.	Age.	Scarlet fever previously.	Scarlet fever since.	REMARKS BY DR. M. K. ROBINSON.
1	8	o	o	Members of same family.
2	10	o	o	
3	18	o	o	
4	6	o	o	Same family. Four other members who had previously had scarlet fever escaped epidemic of sore throat.
5	8	o	o	
6	5	o	o	
7	7	1	o	Same family; 7 and 8, mild sore throat, probably modified by previous scarlet fever.
8	5	o	o	
9	9	1	o	
10	3	1	o	Very slight case of scarlet fever last year.
11	8	o	o	
12	2	o	o	
13	1	o	o	Same family.
14	2	o	o	
15	9	1	o	
16	9	1	o	Same family. No. 13, mild case of scarlet fever. No doctor employed.
17	2	o	o	
18	12	o	o	
19	5	o	o	Same family. No. 16, mild case of scarlet fever.
20	4	o	o	
21	2	o	o	
22	22	1	o	Same family. Three other members of this family, who had previously had scarlet fever, escaped throat epidemic.
23	6	o	o	
24	7	o	o	
25	7	1	o	Same family. Case 22, mild throat case.
26	8	o	o	
27	6	o	o	
28	9	1	o	No. 28 said to have been mild; no doctor.
29	9	1	o	
30	9	1	o	No. 29, mild throat case.

We learn from this table,

1. That *two members* of one family who had not previously had scarlet fever, developed the foot-and-mouth disease, while *four other members* who had previously had scarlet fever, escaped.

2. That *three members* of another family who had not previously had scarlet fever, contracted foot-and-mouth disease, while the *three other members* who had the scarlatina, escaped.

3. That but one person developed scarlatina after having had foot-and-mouth disease, and that attack was very mild.

4. That persons who, having had scarlatina, contracted foot and-mouth disease, had the latter affection very mildly.

5. That these individuals developed the foot-and-mouth-disease, as a result of exposure to manure derived from cattle affected with apthous fever.

As supplementary evidence in favor of the prophylactic power of foot-and-mouth disease against scarlatina, I will re-state the facts concerning three children whom I inoculated with the virus of foot-and-mouth disease.

Case 1.—M. M., about eight years of age; had never had scarlet fever. On January 12, 1884, I injected under the skin of his arm, a small quantity of the virus taken from a cow, having a mild attack of foot-and-mouth disease. A short time thereafter, the cervical glands became enlarged and tender to the touch. There was no marked systemic disturbance, neither was there any sore mouth or throat. All signs of glandular enlargement and tenderness had disappeared in six or seven days. He was then taken to a house in which there was a boy sick with scarlet fever. The disease was in the desquamating stage, and the throat still sore. His parents being poor, the pillow upon which the patient lay, had not been exchanged for a clean one since the beginning of the sickness. This pillow was placed upon the face of the boy who had been inoculated, and held there some time. He was then made to inhale the breath of the patient, and afterward to remain sometime in the sick-room. The boy did not develop scarlatina after having been thus exposed, neither has he contracted the disease since, although there has been opportunity for infection.

Case 2.—B. B., aged four years; had never had scarlet fever. On March 6, 1884, I inoculated her in the arm with a small quantity of foot-and-mouth virus. On March 13th the temperature rose to 103° F. Her mouth was sore without showing any vesicles, and she complained of a pricking sensation in her throat. She had slight headache, the appetite was impaired, and she was quite peevish. There was no eruption at any point of the body. By March 20 she was well. She was then taken to a house where I had a patient in the desquamating stage of scarlet fever. The patient was very sick at the time because of complications; indeed, was so ill that I was somewhat doubtful about the issue. The same plan of exposure was adopted as in the first case, except that I could not get the inoculated child quite near enough to the patient to inhale her breath; but the "pillow exposure," and the length of time she remained in the sick room, afforded a good opportunity for infection. She did not subsequently develop scarlet fever.

Case 3.—J. M., aged about ten years. Had never had scarlatina. I inoculated him just as I did the first two. He did not afterwards develop any systemic disturbance or local lesion. After a lapse of three years, with opportunity for infection, he tells me he has not had scarlatina.

These cases taken in connection with the others, suggest gratifying results should further inoculations be made.

In one of my note books I find this entry, namely :

Thursday, August 19, 1886, went with Dr. Robinson to Canterbury, England, where we saw the health inspector, who told us that in one family, the foot-and-mouth disease attacked *only* those members who had *not* had scarlet fever. We found four persons suffering from the epidemic sore throat who had had scarlet fever.

Without commenting now upon what has thus far been stated, I will describe somewhat briefly (quoting Professor Walley), foot-and-mouth disease as it affects animals.

Synonyms.—Murrain; eczema epizootica; distemper; epizootic aphtha; vesicula epizootic; aphthous fever.

Definition.—It is a vesicular eruptive or exanthematous affection, due to a specific ferment, and having its lesion localized in the skin and mucous membranes.

Characters.—Eczema Epizootica is probably indigenous in the bovine tribe only, but there is no direct proof that it may not originate in the ovine species also. It readily attacks sheep, goats, swine and poultry; it is easily transmitted to the human subject, and it has been described as existing in the horse, the dog, wild fowl, deer, wild boar, etc. Walley says little or nothing is known of the ferment of this disease. Dr. Klein, of London, says the disease is caused by a micrococcus which forms in artificial media, besides dumb-bells (diplococcus), beautiful chains (streptococcus). These differ in length according to the number of micrococci composing them, the short chains being a linear series of four, six, or eight micrococci, the longer ones, of more than eight up to thirty and more micrococci. The longer chains are always curved, and even convoluted.

In different outbreaks it localizes itself mainly in the feet, the udder, the mouth, the skin and mucous membranes respectively.

One attack does not give immunity from others; and not only may an individual animal suffer several times from it in the course of its life, but even twice or thrice in a season, *though in the great majority of cases each successive attack becomes milder in its character.* Dr. L. McLean, Government veterinary surgeon, says, "*In the bovine species one attack of foot-and-mouth disease does not give immunity from the disease; but in the ovine species it does.*"

The channels by which nature endeavors to eliminate the poison, are the salivary and mammary glands, the mucous glands of the bronchial and intestinal mucous membranes, and the skin.

The effects of the poison on the skin are invariably well marked, *desquamation of the cuticle being extensive*; but while this is a common characteristic of many zymotic diseases, it neverthe-

less points to the necessity of encouraging the elimination of the poison by this channel.

Period of Incubation.—Is, compared with other zymotic affections, short, viz., from twenty-four hours to three weeks. The average is from two or three, or five to six days.

Invasion.—Is, on the whole, rapid and pronounced, the manner of invasion depending upon the amount of poison received into the system, the conditions of the host, and the surrounding circumstances.

Duration.—Is variable, and is regulated by the intensity of the attack, and the care which is bestowed upon the patient. From ten to twenty-one days may be looked upon as the average period of duration where the disease runs a regular course, and is not succeeded by important sequelæ.

Fatality.—Depends largely upon the character of the outbreak; in some seasons death in any animal is rare, while in others, great numbers succumb to the primary effects of the disease.

Propagation.—It is propagated by direct and mediate contagion, as the virus is both fixed and volatile, but it is only diffused through the medium of the atmosphere at comparatively short distances. As the saliva, the nasal, conjunctival, and intestinal mucus are highly charged with the virus, it is most readily spread by the conveyance of these secretions to healthy animals, by many direct and indirect means.

SYMPTOMS AND COURSE.

The symptoms must be divided into general, or constitutional, and local.

The premonitory constitutional symptoms are identical with those of other zymotic diseases. These are— isolation, usually very marked; arched back in cattle; tucked up abdomen; muscular twitchings or shiverings, more or less severe; erection of the hair, the skin being hot and dry; and stiffness of gait, which is most pronounced where the feet—and particularly so if three or the whole—are affected.

Bowels usually a little constipated; urine sometimes scanty, high-colored, and laden with solids, especially as the disease advances; at other times it is profuse and limpid. There may or may not be mucous discharge from the eyes and nose, with increased lachrymal secretion from the former. In young animals, exposed to inclement weather, such discharge is very constant, and in the course of a few days, that from the eyes forms a yellow accretion at the inner canthus of the lids and down the sides of the face, a similar accretion being formed, by the nasal discharges, round the edges of the nostrils.

Under exposure, an irritable bronchitic cough is present, by localization of the lesions in the bronchial mucous membrane.

Temperature always elevated to the extent of

2° or 3° F.; the pulse and respiration may not be much disturbed. Appetite indifferent when invasion is rapid, and the fever high, or the stomach and bowels affected; in ordinary cases, a desire for food is evinced, even though the lesions in the mouth are extensive. In ruminants, rumination is performed naturally, unless the mouth is much affected.

In milch animals, interference with the lacteal secretion will be largely regulated by the localization or non-localization of the lesions in the udder.

As the disease advances, the phenomena above enumerated increase in intensity, and continue to do so until the climax—which may be calculated at from the third to the seventh day—is reached, after which they gradually subside.

In addition, vesicular and pustular eruptions may appear on the skin of different parts of the body; they are most often seen in the pig, and the primary may be succeeded by secondary, and even tertiary crops.

Jaundice is a very frequent concomitant. *Desquamation* of the cuticle is an *invariable accompaniment of convalescence*, the skin being covered with abundant bran-like scales of a yellow color; it is also extremely irritable, animals rubbing against prominent objects vigorously.

If the lesions are localized in the gastro-intestinal mucous membrane, colicky pains are induced.

The local lesions are, so far as the skin is concerned, usually seen in parts devoid of hair, or where it is delicate, as the feet, the mouth, the udder, and in some cases the vagina of the female, and the sheath of the male. In all animals, the earliest pedal sign is lameness—more or less sudden and severe—with uneasy movements of the limbs. In the course of a few hours, subsequently to the advent of the lameness, the vesicular eruptions characteristic of the disease appear. The pedal vesicles are bladder-like elevations, varying in size from a hazel-nut to a walnut. If allowed to remain undisturbed, the vesicles burst in from three to twelve hours, and discharge a limpid, colorless, or pale straw-colored fluid; the jagged edges of the lacerated epidermis become retracted, and slightly everted, and form an irregularly raised white boundary around the margin of the resulting sore. The cutaneous structure which is exposed by the eruption of the vesicle, is of an intensely scarlet color.

The advent of mouth lesions in cattle is marked by smacking of the lips, or rather the mouth; by dribbling of the saliva, and by partial or total inability to masticate. The mouth vesicles vary in size and character, according to the part of the buccal membrane in which they are located. The pad vesicles appear as flattened elevations of the epithelium, without areolæ around their bases. On the tongue, the vesicles are much larger than elsewhere. They vary in number from one to five, and are very resistant. They present much

the same character as on the pad. Two or three may coalesce and form one very large vesicle. On the inside of the cheek, the reddened condition of the mucous membrane is more discernible, and the resistance of the vesicles considerably diminished.

On the lower lip vesication, in ordinary cases, is comparatively infrequent. The vesicles, when they appear, are much smaller. On the skin outside the lips, vesicles are rarely seen. More frequently secondary than primary, are small, and succeeded by pustules and scabs.

In the course of a few days, the epithelium will be so far restored as to form a perfect coating over the inflamed tissues. In the cow, vesicles usually appear a few hours after the premonitory signs of the disease, on the body, and around the apex of the teats, but they may be developed in any part of the udder. At first they are discrete, but frequently become confluent. They vary in size from a three-penny piece upwards. The period of vesication will vary from one to two, to about thirty-six hours, depending upon amount of friction and pressure to which they are exposed.

The exposed epidermis, after rupture of the vesicles, is intensely hyperæmic, but if the parts are undisturbed, it quickly becomes covered by inspissated pus, coagulated lymph, and epidermic cells—the hair, when present, assisting in forming a coherent brown-colored scab, which has usually irregular edges, and varies in thickness.

The substance of the tongue is usually much more flaccid than normal, and if the papillæ are carefully examined, it will be found that, in the earlier stages of vesication, they are much congested, subsequently becoming atrophied and shrivelled. It sometimes happens that when the tongue is seized to explore the mouth, large patches of epidermis come away in the hand, as if the tongue had been boiled. This occurs in the aphthous stage, when the vesicles have ruptured, and, the epidermis being removed, erosions appear. (Fleming.)

Thus far I have simply stated *facts*, such *facts* as should receive the most earnest attention of the profession. I make this statement without apology, because I am satisfied that when a disease failed to attack *every* member of *eight different* families who had previously had scarlet fever, and *attacked every other member who had not had* scarlet fever, there was some good reason for it; that reason apparently being, not coincidence, but the protective influence of the one disease against the other.

Further, not only was this true of eight families in Dover, England, but of two families in Bethersden, England.

Again, there were other individuals, who, having had scarlatina, escaped the throat epidemic, and, as already stated, when the "throat epidemic" occurred in those who had had scarlatina, it was mild in character, as far as could be learned,

and in the *one* instance in which scarlatina occurred after the epidemic sore throat, it was a very mild attack. Here again, there must be some reason for the mildness of one disease when appearing after the other in the same individual.

Thomas, in his article on scarlatina, says: "Soon, perhaps already on the second or third day, the *entire coating of the tongue with the superficial layers, exfoliates, either at once or in successive sections, in a manner found in no other disease.* Now here is a disease (foot-and-mouth disease) in which this *very thing does occur*, as already stated on the authority of Fleming. In both, the *papillæ of the tongue are swollen and prominent.* In both there is *abundant desquamation of the cuticle.* Sometimes in scarlatina ulcers occur upon the tongue, cheeks and gums, as in foot-and-mouth disease. Foot-and-mouth disease frequently attacks cattle more than once; sheep, on the other hand, do not so commonly have a second attack." In the case of scarlatina, Thomas (Ziemssen, Vol. ii, page 186) says: "As a general fact, it cannot be disputed that scarlatina belongs to that class of diseases which occur but once; nevertheless, exceptions appear to be of comparatively frequent occurrence." He then says he collected, in the literature to which he had access, *about two hundred cases of a second infection, besides a few reports of a third and fourth infection in the same individual.* Murchison observed relapses of scarlatina in two sisters. Trojanowsky says "in two of his cases of secondary scarlatina, both parents had also the disease twice, and in a third case, the father had been affected twice." Richardson states that he has experienced scarlatina in *his own person three times.* Sir Robert Gillespie tells of a young lady who had scarlatina *three times*, the diagnosis of which was unequivocal. (Ziemssen, Vol. ii, p. 191.) Henrici, during the epidemic of scarlatina in Kiel, from 1797 to 1798, attended a woman who was then undergoing her *seventeenth* attack of scarlatina with all its symptoms. (Ziemssen, Vol. ii, p. 192.) The latter statement may be exaggerated. Dr. Edward J. Ill, of Newark, N. J., writes me as follows concerning some of his own patients: "One of my patients, 6 years old, had an attack of scarlatina in 1881. In 1883 she had another attack. In January, 1887, a *third* attack. In 1888 she had a *fourth* attack. Desquamation followed in each instance."

Another case, "J. G., æt. 12 years, had scarlatina in 1888—had a prior attack in 1881."

The tendency to suppuration of the tonsils, and the continued enlargement of the cervical glands, in persons who had the foot-and-mouth disease, suggested a resemblance of the two diseases: scarlatina and foot-and-mouth disease.

A consideration of the above, inclines one to the opinion that the two diseases under consideration, may be more closely allied to one another

than has heretofore been supposed to be true, and that it is probable that an individual who has had one disease, either will not contract the other on exposure, or will have it in a very modified form, if he contract it. Dr. Robinson, in a personal letter to me, says: "As to the prophylactic power of one disease against the other, my own view is, that if persons who have had one disease, and are exposed to the other, suffer from the alternate one, they do so in a mild form. If there is some intimate relation between the two maladies, it is fair, I think, to assume that persons who have suffered from one form, are less susceptible to the other. I do not think I mentioned in my former communications, as *evidence of the relation of the two diseases*, that in the County of Norfolk, during a period of great prevalence of foot-and-mouth disease amongst cattle in 1883, *there was a great increase of scarlet fever, and especially a scarlatinal sort of sore throat.* This fact was stated in the House of Commons, during a discussion of the Contagious Diseases (Animals) Bill, on March 18, 1884, and reported in the daily papers the following day." Professor Law said, in discussing my former paper, "Epizootic foot-and-mouth disease had at times attacked *nearly all the cattle and the people of Great Britain*, and considering the fact that the disease was so prevalent, there should be less scarlet fever in Great Britain than in America, where the foot-and-mouth disease is comparatively unknown."

Sir James Paget, in a letter to me upon this point, says: "I have not seen or heard of foot-and-mouth disease communicated to persons in this country. I have asked some of those likely to have known of such cases if they had occurred, but I have learned nothing from them."

Prof. Thomas Walley, of the Royal Dick's Veterinary College, Edinburgh, Scotland, says in a communication to me: "Very few people contract eczema" (foot-and-mouth disease). Prof. E. Klein, in speaking upon the same matter, says:

My Dear Sir:—In answer to your letter of October 29, 1889, as to whether many of the people of Great Britain have had foot-and-mouth disease, I must say that during the nineteen years that I have resided in this country, I have heard of some outbreaks of foot-and-mouth disease amongst the people in various localities, but they were always *localized, and did not involve many cases.* I must say that I have never been more surprised than when you told me, in your letter, that Prof. Law offered the remark, that *many persons in England have had foot-and-mouth disease.* As a *matter of fact*, the contrary is the case. During the last four or five years, I have not heard of any appreciable amount of foot-and-mouth disease; in fact, I do not think there has been any epidemic of it. I have made inquiries of several friends in the country, and I hear from them that many practitioners have never seen a case in the human—in fact, some, in practice during the last four years, did not know it to have occurred in a single instance in their districts. Only a few weeks back, I had a class in bacteriology in which were twelve gentlemen, in practice as health officers in various parts of England. Every one of them to whom I put your question, laughed at the idea that foot-and-mouth disease is alleged to be a common disease in man in this country.

These gentlemen evidently do not agree with Prof. Law upon the above point. Even if we assume that the disease is more common than it is supposed to be, such *facts* as are set forth in this paper concerning it, in its relation to scarlatina, have never been noticed or commented upon, and to my mind are not affected by the statement that scarlatina is very prevalent in Great Britain. Dr. J. Lewis Smith said, in discussing my former paper: "Since the time of Jenner, the hope has been awakened, that some of the other fatal infectious diseases, and especially scarlet fever, might be prevented, as small-pox has been, by the inoculation of a milder and modified disease derived from the lower animals." Now let me ask my professional brothers, in a spirit of perfect candor and honest inquiry, if in the evidence furnished by the epidemics in England, the *facts* concerning which are herein quoted, we have not a fairly secure basis upon which to build the hope, that scarlatina may be either prevented or modified, by introducing into the human system properly prepared and attenuated foot-and-mouth disease virus. Let me also ask if enough cases have not been quoted; a sufficient number of experiments performed; and the ultimate results of sufficient importance, to warrant a more extended trial being made of this proposed method of preventing the development of, or modifying, one of our most fatal and dreaded diseases? No theoretical objection, however adroit and well planned, can settle the question before us; further actual experience with the diseases in their clinical and apparently prophylactic relations to each other must be had, before any one can positively deny, or prove to be true that which *seems to be a fact*, namely, that *scarlatina* and foot-and-mouth disease are mutually protective.

Suppose some drug had been administered to certain members of eight families in Dover, England, prior to the appearance of the "throat epidemic," and that when the families were exposed to the contagium of the epidemic disease, only those who had taken the drug escaped, while every other member contracted the disease. Do you not think that drug would have a new interest, and be given a fair trial, in order to determine beyond dispute whether it would, in the majority of cases, exercise this preventive influence. Now, why not, instead of saying, How can this be true? or, This cannot possibly be realized—give the proposed method a fair, honest trial, just as you would give the drug a fair trial, or just as Jenner gave his method a trial, and then be guided in the future by the results. Suppose a certain number of children, in a children's hospital for the treatment of contagious diseases, were inoculated with a modified virus of foot-and-mouth disease, and after recovery from the effects of such treatment, should be put into a ward with scarlatinal patients, and allowed to remain sufficiently long

to be thoroughly exposed to the contagium of the disease, would not that be a fair way to settle the question? What I wish, is simply to determine positively, and as soon as possible, whether the escape from the "throat epidemic" of certain individuals, in the two epidemics in England, and of the three children from scarlatina whom I inoculated with the virus of foot-and-mouth disease, be due to the protective influence of the one disease against the other, as appears to be the case. If we learn that we may thus prevent the development of a disease so common, oft-times so fatal, and so frequently followed by distressing sequelæ, will we not confer a blessing upon those who are susceptible to its contagium? If, on the other hand, we discover that we cannot, in the majority of instances, confer this immunity, we shall at least have made a commendable effort to realize that which a large number of clinical facts seemed to indicate as possible of accomplishment.

CHATTANOOGA AS A HEALTH RESORT.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 21, 1890.

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It has been said, "Earth has no sorrow that Heaven can not heal." It may be quite true, and may be otherwise. In a medical way it is prognostic rather than diagnostic. We prefer to admit it, but it does not fully satisfy. Most persons continue to seek relief in this life. The afflicted appeal to us now as ever before, and will hereafter till the causes be removed. The world is full of victims, and it is said not less than several thousand years ago, they are with us always, those with too much poverty, as also too much wealth. The consumptive, the strumous, the cachectic of wide degree, all ask to be cured *now*. The vast majority of invalids are so surrounded, and have such maladies, that they are best attended to in hospitals, or their own homes. There are, however, few practitioners who do not have some patients who would flourish best under different hygienic conditions, and are so circumstanced that they can afford to undertake a climatic change. It is in the interest of such that the following suggestions are addressed.

Chattanooga, that pushing, enterprising and plucky city of this genial Southland, numbering now her 50,000 souls, is situated on the southern bank of the Tennessee river, on the extreme southeastern border of the State. Surrounded by mountains and ridges on every side—Lookout Mountain, that grand old mountain, which stands there silent and glorious, like the Egyptian Sphinx, with its many secrets, witnessing the evolutions and translations that have, are and

will be made ; Walden Ridge, whose brow is said never to have been furrowed by a case of consumption ; Missionary Ridge, rendered historic by means of its many desperate and bloody battles ; —Chattanooga, I say, stands as the centre of the New South with her many manufacturing interests, with her cosmopolitan population, and her hills and lands in the near vicinity filled with coal and iron in inexhaustible quantities, and the necessities of life within reach of him who will but stretch forth his hand. An adopted citizen who lives here because he shares her adversity and prosperity, her climate, and loves her people, applauds this city and gives his views as to her health and invigorating climate, and the health resorts all around her borders.

One of the most important points in favor of a spot as a health resort is its accessibility, and, indeed, what more could you wish than is shown in Chattanooga? Extensive systems of railroads, that reach out to all points of the compass ; one may come from the North, East, West, or South. A visitor procuring for himself a sleeping-car berth at his former home reaches this city in a few hours' travel with the minimum of inconvenience ; and once in the city, he may go by rail to any of the mountain tops that I have mentioned, in a few moments' time.

Lookout has its cable incline and its standard gauge steam railway, each having just completed large and magnificent hotels at its terminus.

Missionary Ridge, dotted with its many handsome residences, is reached by an electric railway, cars leaving the centre of the city every few minutes. Walden's Ridge, across the river, which is now being spanned by massive iron bridges, is surveyed for electric and steam railways, requiring less than an hour to reach its broad plateau.

From these conditions you will see the city has within easy reach plenty of elevations, cool and exceptionally healthy, to which its people can go in all seasons. On the plateau many of the citizens now have summer cottages, some who take boarders, and hotels are convenient, well equipped and plenty ; and in these various houses all the luxuries and comforts that the invalid may require are to be had at fair and moderate charges.

The scenery in and around Chattanooga is ever varying and beautiful. The air is exhilarating and invigorating to those who need and desire it. There is ample opportunity for mountain climbing, with all its resultant benefits : expanding the chest, exciting respiration, increasing muscular vigor, and sending the blood bounding through the capillaries, giving tone to the system, firmness to the flesh, and health to the invalid ; and to those who are not so afflicted, making the weak strong, and the strong robust.

Boating excursions up and down the Tennessee river may be, and are often, indulged in, giving a change of beautiful and attractive scenery equal

to, and in many respects surpassing, that along the Hudson and the Rhine, except as to the historic interest in the one, and ruined castles in the other, both of which I have seen.

Suitable climate is a paramount necessity for invalids, but the accessory advantages of social surroundings are quite as important ; in order to obtain the maximum benefit of climatic influences, mental repose and pleasant companions are indispensable. Many an invalid who leaves home and friends to regain, at some distant resort, the health which is denied him among those who are dear to him, finds himself among strangers, from whom he fails to derive the sympathy and attention that his state of health requires ; he becomes despondent, and returns home unbenefited and blaming the resort for his unimproved condition. To those who are unable to be accompanied by friends or relatives in their search for health, the hospitality and social temperament which pervades this cosmopolitan Chattanooga district generally will go very far to relieve the sense of loneliness and consequent yearning after home that oppresses the mind and retards physical exercise and recuperation in most of the hygienic and sanatory resorts.

The purification of the atmosphere, and the oft repeated renewal of the tonic and electric conditions, are processes constantly impressed upon the mind of the inquirer into high altitude effects, whether he explains it on the theory that the mountains are constantly giving off the electrical force engendered nearer the center of the earth, or whether he sees in the positive electric state of the dry air the facility in the mountains for an easy interchange between this and the negative electric state of the ground.

We find, too, that the therapeutic conditions of the dryness and atmospheric rarefaction affect him in proportion to the elevation of his abode above the sea-level and above the underlying lands.

And here in Chattanooga do we find these conditions well exemplified. The city, which is protected on all sides, lies in a basin with an elevation of 640 feet above the sea-level. The highest point of Lookout Mountain is 1,780 feet above the river, and Walden's Ridge is about 1,000 feet, and Missionary Ridge 490 feet, giving, you see, complete protection to the city on all sides.

The city is subject to very little cold, as compared with others of similar size in our neighborhood, for instance Memphis, Nashville and Birmingham. These cities have no mountains which ward off the winds, and when they blow over the country these various places feel the chilling effects, while in Chattanooga we have only a moderate fall of temperature—enough to let us know that a cold wave is passing over the country.

The observations as given by the U. S. Signal

Service show that the lowest temperature generally occurs in Chattanooga about January 1 to 12, and the highest in July. The average temperature for each day in the year is 59.7°; at Toledo, 50.5°; Albany, 48.4°; San Antonio, Texas, 69°. This last station is considered by the U. S. Government as the healthiest place in the States, but the official records show it to be 9° warmer than Chattanooga. A lower mean annual temperature can be obtained from any of the mountain tops in the vicinity of Chattanooga, the temperature between the city and Lookout Mountain being 8°. The mean annual range of temperature for this city is 18°, while for the cities mentioned above it is from 20° to 16°. The highest temperature for Chattanooga is 101° in July, 1879, the lowest temperature on January 11, 1886, 7°, showing a range in nine years of 91.7°; in San Antonio the highest (1880) showing a range of 98°.

Now, if we take the city of Nashville we find the official records show that the highest temperature recorded in twelve years was 104° in 1874, and the lowest 10.2° below zero in 1884, giving a range of 114.2°, or a range of 22.5° greater than at Chattanooga.

An item of practical importance is the dew-point, since it shows the point near which the descent of the temperature of the air during the night will be arrested; for when the air has been cooled down by radiation to this point, dew is deposited and latent heat is set free. The amount of heat thus freed being great, the temperature of the air is raised; but as the cooling by radiation proceeds, the air again falls to a little under the dew point; dew is again deposited, heat liberated, and the temperature raised. Thus we can determine the dew point and the minimum temperature.

The relative average annual humidity of Chattanooga is 71 per cent., Cincinnati 67.7 per cent., Bismarck 82.8 per cent., Nashville 71.1 per cent.

The average annual number of clear days in this district is 117, fair 147, cloudy 101, giving a number in favor of Chattanooga, as compared with the above mentioned cities, ranging from sixteen to twenty-one days.

Now, gentlemen, you will see from the facts and figures here stated that Chattanooga is well located and sufficiently elevated and varied in its scenic attractions, and is destined to become one of the most renowned of health resorts. Allow me to close this section on climate by quoting the words of a Northern physician, made in a public speech some time since:

"Who among us is not mindful of the rich delights of our usual March climate? March, that month of terror in other latitudes, brings us the blossoms of Spring in rich profusion, the working days in our gardens and flower-beds, and gives us a noonday warmth of 80°, while the coolness

of night rarely causes the mercury to fall to 40°. April follows with its luxuriant wealth of flowers in field, forest and lawn; the rich and varied verdure of the mountain slopes; the grand picnic days; the profusion of blossoming laurel and azalea; the time when we feel most the exhilaration of a tonic atmosphere, and youth comes again to age. And then follows May; beautiful, beautiful, glorious May! Who can describe an East Tennessee May in any other way than by exclamations? May flowers? No, indeed; we squander those in March. We hurry past our roses of the commoner sorts in April, and come into realization of the complete bliss of living in the real native land of the continual blossoming rose in the early days of May, when the black boys peddle young mocking-birds through the streets, and the luscious red strawberries come, so sweet, so plenty, and so welcome. And then comes June; young summer, older than May, wiser, larger, fuller, and bringing the first harvests of ripened grain; holding in its provident lap the most liberal bestowals of the Almighty in rewards for the labors of man, with a great bonus of earth's spontaneous fruits.

"Can a better summer resort be pictured? If consumptives want altitude and mild climate together, and upon that all authorities agree, it is to be found here. These mountains are so common to us, who use them for daily, weekly and monthly convenience in the summer days, a sleeping place away from the dust and mosquitoes, as well as cooler home quarters, that we have no just appreciation of them; but the mountains of East Tennessee are destined to occupy a high place in the public estimation, in future, as a living-place for invalids."

Now, more than three years ago Chattanooga had one mile of brick sewer, with no paved street. The garbage and refuse matter was thrown into the streets and alleys, and had a death-rate of twenty-two to the thousand population per annum. At the present time she has over fifteen miles of main and lateral sewers made of brick and clay pipe ranging from 12 to 15 inches in diameter. Since the sewers were well started and the work of the health officer, with his corps of scavengers, was duly organized, the death-rate of the city has steadily decreased until it now stands in the winter months at 8 per 1,000, with 62 per 1,000 per year for both races; but you must remember, gentlemen, that this number is greatly increased by those who meet with violent deaths from whatsoever cause, and by those who come here from other places nearly dead of their disease, and by those who are shipped here for interment.

The following table shows you the comparative mortuary reports for November, 1889:

Chattanooga	12	per 1,000 per annum.
Knoxville	13.44	" "

Nashville	14.45	per 1,000	per annum.
Memphis	22.04	"	"
Chattanooga, April, 1890	12.6	"	"

If our population were entirely white, the rate would run in ordinary years below 8.5 or 9 per 1,000.

This last topic is the most important one, and in it I wish to present to your minds the great freedom from many of the diseases that human beings are heir to, and show the method that may be adopted in the healing of the affections that we have to contend with.

Until the last three years Chattanooga was regarded as a hot-bed of malaria, but the greatly improved sanitary condition of the city has removed this element to a very great extent, and in a fair practice in and about the city I have seen but one case of malaria, though a number of cases have come under my notice who live in the other towns and cities west and south of us. For instance, Miss S., whose home is in Middle Georgia, came to Chattanooga in December, 1889, suffering from malarial fever, having chills every day. This had been her condition for nearly five months past. Under the influence of quinine, calomel and arsenic, in three weeks' time was entirely relieved, and now has gained 37 pounds in flesh.

The various acute infectious diseases exist here only in a limited number and degree, as shown in the official report of December, 1889, for the preceding year: Number of deaths from typhoid fever, 19; scarlatina, 1; measles, 2; diphtheria, 2; dysentery and diarrhoea, 51; whooping-cough, 1.

The increased number of diarrhoeal troubles is among those who have recently come to the city, and being invigorated by the delightful change of air, indulge too much in the delicious viands and drinks of the table.

It has been my pleasure to witness patients suffering with catarrhal conditions of the respiratory tract derive the utmost benefit from a prolonged stay in this latitude, and many greatly improved by a month's or more visit to friends and relatives in Chattanooga.

The condition which is aided most, and in a large proportion of the cases cured by treatment here, is pulmonary consumption. Allow me, gentlemen, to tell you two cases that have been absolutely cured of their troubles, and the manner in which it was accomplished.

Case 1.—Dr. W. A. Dietrich, of Indiana, began coughing in the spring of 1888. His cough grew gradually worse, yet he paid no attention to it until August, when he had an attack of hæmoptysis. He expectorated blood constantly for one week, and then went to Chicago to consult Dr. J. P. Ross, of the Rush Medical College, who diagnosed it as phthisis with a tubercular deposit in the superior and middle lobes of the right lung. Dr. Ross advised him to go to Lookout Mountain.

Dr. D. then returned to his home in Indiana, and during the following four weeks he had several slight hæmorrhages, a severe cough, night-sweats, anorexia, and a rapid loss in weight and strength, he having lost 25 pounds in weight since he first began coughing. The latter part of September he left Indiana for Lookout Mountain, but first went to Chicago to again consult Dr. Ross, who said the deposit was increasing in size. Shortly after reaching the mountain his cough began to decrease, expectorations became less, appetite increased, night-sweats ceased, and he rapidly gained in health and strength, until now there is not a trace of tubercular trouble to be detected in his lungs, and he weighs more than he ever did in the North. The doctor now enjoys the best of health, and has made Lookout Mountain his permanent home, where he anticipates opening a sanitarium for the benefit of those afflicted as he was.

Case 2.—Mr. J. J. Heelan, of Chicago, began coughing in November, 1886, became hoarse a few weeks afterwards, and by the second week in December was so hoarse that he could not speak above a whisper. At that time he had a severe cough, with night-sweats, anorexia, and considerable emaciation. He consulted numerous physicians, who diagnosed it as tubercular phthisis. He received no benefit from their treatment, and by the second week in January, 1887, was confined to his bed, where he remained two weeks. Was then examined by Dr. Ross, who said he could not live six weeks longer if he remained in Chicago. The doctor advised him to go to Lookout Mountain, but instead of going direct to the mountain he went to Massachusetts and remained one month, and arrived on Lookout the 17th of March, 1887. The same day that he arrived Dr. Ross again examined him, and said that he not only had tubercular deposits scattered all through his left lung, but also had them in the right, and that he (the doctor) could not give him as much encouragement as when he left Chicago. The doctor told him to try the climate one month and see whether it would benefit him. When the month was up he noticed a slight improvement and concluded to remain. The following July Dr. Ross again examined his lungs and found the deposits in his left lung clearing away, with a very noticeable improvement in his general appearance. In the fall he underwent another examination by the doctor, who said that the deposits in his left lung had almost cleared up, with some improvement in the right lung. In March, 1888, just one year after coming to the mountain, the doctor again examined him and found both lungs clear, with the exception of a slight deposit about the size of a quarter in the apex of the right lung. In September, 1888, the doctor again visited the mountain and examined his lungs, and told him that it would take an expert to tell

whether he had ever had any pulmonary disease. He has coughed none since 1888, and at present there is no trace of the former tubercular trouble.

I wish to state that in these two cases the treatment was as follows: A tonic of iron and quinine, inflation of lungs, while in-doors, by muscular effort, daily walks to various points of interest on the mountain and ridges, and to the city when necessary, carrying luncheon with them, regardless of the weather, unless extremely inclement, always clothing themselves suitably to the season.

Should any of my hearers have the *Medical News* of Sept. 28, 1889, I should be glad to have you read the article by Dr. H. I. Bowditch on "Open Air Travel as a Cure of Consumption," in corroboration of the above treatment.

Thanking you for your patient indulgence, I will close with this brief summary: Chattanooga as a health resort presents herself as a place with a pleasant historic interest.

A city easily accessible from all parts of the Union, with a varied and extensive change of scenery; with climatic conditions, all told, unsurpassed by any point in this country.

In comparison with her neighboring cities, her death-rate is the smallest, and her sanitary and sanitary conditions greatly increasing.

And, finally, the variety of diseases is limited, they can be well treated, and with the most gratifying success in the vast majority of cases.

Rooms 133-4 Richardson Building.

PROSTATITIS AND PROSTATIC ABSCESS.

Read by Title in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

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In entering upon a study of certain pathological conditions of the prostate, there appears to exist a peculiar necessity for observing accurately its normal structure, conformation and anatomical relations with the rectum and the bladder on one hand and the urethra on the other.

The prostate is commonly said to resemble a horse chestnut somewhat in shape and size, the small extremity being directed downwards and forward, and the base upwards and backwards, in the erect position of the body. The upper surface is directed forward to the deep perineal fascia which it touches.

The base is smooth and rests on the rectum, to which it is connected by dense areolar fibrous tissue. When the prostate is thoroughly isolated from the surrounding parts by dissection, it presents something the shape of a truncated cone. The normal adult gland measures about one and

one-half inches in its transverse diameter and its base, an inch antero-posteriorly, and three-quarters of an inch in depth. Weight about five drachms, and is held in position by the two anterior ligaments of the bladder and by the posterior layer of the deep perineal fascia which invests the beginning of the membranous portion of the urethra and prostate gland, and by the anterior portion of the levator ani muscle which passes down from the side of the pubic symphysis and the anterior ligament of the bladder.

The prostate is usually regarded as consisting of three lobes, two lateral which are symmetrical, and a middle or third lobe between them and behind the urethra. It was first spoken of by Sir E. Home, although its existence was well recognized by Morgagni, John Hunter, and others. This so-called third lobe is not always constant. Sir Henry Thompson considers it rather more of an abnormal condition when found in persons under 50 years of age; and he regards it as due to an hypertrophy of the large amount of glandular tissue which exists in this portion of the prostate.

Commencing at the neck of the bladder the urethra continues through the prostate downwards and slightly forwards, the larger portions of the gland lying on either side, and about one-third above and two thirds below the urethra. The vesical boundary of the prostatic urethra is the uvula vesicæ, seen as a slightly rounded prominence on the floor of the bladder. In front of this may be observed twenty to thirty small openings—the mouths of the prostatic ducts—which can be seen with a small magnifying glass, and are usually arranged on either side of the verumontanum. The length of the prostatic urethra varies from one and one-eighth to one and one-fourth inches. The utricle (vesicæ prostatica), the supposed analogue of the uterus, is a small sac opening on the anterior portion of the verumontanum, oval in shape, lined with mucous membrane which sometimes secretes a dark, reddish-brown jelly-like material. The common ejaculatory duct formed by the junction of the vesicula seminalis and vas deferens internus with its fellow of the opposite side at the base of the prostate, about three to four lines below the opening which transmits the urethra.

The prostate is inclosed in a thin but firm fibrous capsule distinct from that derived from the posterior layer of the deep perineal fascia, and separated from it by a plexus of veins. (Gray). The prostate is composed of glandular and muscular substance. The muscular substance, according to Kölliker, constitutes the proper stroma of the prostate, the connective tissue being very scanty, and simply forming the trabeculae between the muscular fibres in which the blood-vessels and nerves of the gland ramify.

The urethral or anterior portion is largely supplied with muscular tissue; whereas the posterior or vesical portion contains more of the glandular structure. The prostate is usually classified with the multilocular or compound racemose glands of which the salivary or pancreatic are types. The prostatic ducts open into the urethra on either side of the verumontanum. The function of this glandular structure appears to be to secrete a fluid not unlike milk and water in character, known as the liquor prostaticus, slightly acid in reaction, and under the microscope seen to consist of a large quantity of pavement and cylindrical epithelial cells. Its use is not definitely known, but it is supposed by some to assist in diluting the spermatic fluid in order to enable its reaching and impregnating the ovum in the vagina. (Hodgson.) The glands of Cowper, and the follicles of the urethra undoubtedly assist in this diluting process.

The arterial supply of the prostate is derived from the internal, pudic, vesical, and hæmorrhoidal arteries. The veins form a plexus around the base and sides of the prostate, and receive in front the dorsal vein of the penis, terminating in the internal iliac vein. The nerve supply is derived from the hypogastric plexus. The tissues to be encountered in an incision in the median line going from without into the prostate are: 1, the skin; 2, superficial fascia, with its superficial and deep layers; 3, fibres of the accelerator urinæ muscle; 4, deep perineal fascia; 5, levator ani muscle; 6, capsule of the gland.

This now brings us to consider two conditions which are closely allied to each other—inflammation with and without suppuration of the prostate, the latter often supervening on the former.

Acute inflammation of the prostate is not a common affection, when unassociated with other inflammations of the urinary tract. The prostate being rather non-inflammatory in character may serve a useful purpose in checking the extension of inflammation from the much exposed and susceptible urethra below, to the more vital organs above. These structural differences acting as a barrier, and tending to limit the progress of a variety of certain pathological conditions. (Harrison. Ashhurst's Encyclopædia, Vol. 1). Occasionally it is found influenced apparently as a pure idiopathic occurrence, and not from continuity of tissue with surrounding parts.

The causes of inflammation of the prostate are inflammation of the urethra, especially gonorrhœal, by continuity as before stated.

Stricture of the urethra in aggravated form, particularly those deep in the urethra and near the prostate.

Calculi in the bladder and of the prostate.

Direct application of irritants in the shape of strong injections and applications, traumatism, violence from the passage of instruments, cold,

damp, as from sitting on the ground. Pyæmia is a frequent cause of prostatitis which shortly runs into the formation of abscess, probably the result of a thrombi in the prostatic plexus. These, as a rule, are seldom detected before death, as they are liable to be masked by the other more distressing symptoms. I once found an abscess of this sort in a patient who died from pyæmia while I was House Surgeon at the University Hospital. The abscess was about the size of a hazel-nut, and situated near the orifice of the urethra and quite superficial, being just below the mucous membrane.

Among the abuses which may be stated as predisposing factors in producing the affection are excessive use of alcohol, venery, horseback riding, drastic purges, highly seasoned food, ascariæ, hæmorrhoids, constipation and sedentary habits. It is probable that the two latter tend to produce a condition of the veins of the abdomen and those of the prostate which may prove slight predisposing causes.

Morbid Anatomy.—It is very difficult to get an opportunity to examine the prostate in the acute inflammatory stage, as many cases go on to resolution without suppuration. The organ may be swollen to twice or quadruple its normal size, full, tense, and firm to the finger, and yet gradually subside without the formation of pus. If the inflammatory action advances, the prostatic fluid will be found to be mixed with pus. If section is made into the gland, small points of pus will be found, not frank abscesses, but as the secretion of the gland crypts whose cavities are distended with it. If resolution does not take place, and the morbid action continues with the formation of a number of small abscesses varying from a millet seed to a pea in size, these may be increased by running into each other, the intervening tissue finally breaking down, often accompanied by small hæmorrhages into the abscess cavity, or into the gland crypts. Portions of the organ may become softened or sphacelated, or even gangrenous as stated by Brumstead. The mucous membrane of the prostatic urethra is inflamed, thickened, and sometimes has a membrane-like deposit, the result of inflammatory lymph.

It is generally observed that the pus of prostatic abscesses is glutinous or sticky in character, generally differing from the ordinary healthy pus found in other parts of the body. Abscess may form in the prostate in different ways. Acute abscess sometimes develop rapidly in prostatitis and quickly discharge themselves most commonly into the urethra. By inserting the finger into the rectum the prostate will feel full and tense and much larger than normal. If two fingers are inserted, fluctuation may be readily detected. Suddenly a discharge of pus may take place by the urethra and all symptoms may rapidly disap-

pear, which is a most favorable result; or the abscess may burst into the rectum often leaving behind a vesico-rectal fistula. In rare cases the matter will work its way up between the bladder and the rectum into the peritoneal cavity, causing general peritonitis and death. A unique case of prostatic abscess is reported by Dr. Deaver, where it opened above Poupart's ligament. Rarely, I think, will prostatic abscesses point into the perineum, owing to the fact that pus will always burrow or work its way towards the point offering the least resistance, and the deep perineal fascia here acts as a great barrier.

Prostatic abscesses may also assume a chronic condition in a variety of ways.

1. The ordinary abscess may refuse to heal.
2. The essentially chronic tubercular suppuration may take place in the prostate.
3. Abscess may be established by the presence of a foreign body as a calculi imbedded in the gland.
4. Malignant growth may be the cause of a chronic suppurative process.

The earlier symptoms of prostatitis, or a sense of weight and fulness about the rectum and perineum with some pain and uneasiness referred to the neck of the bladder, a frequent desire to void the urine, which is accompanied by an increase of pain, especially at the close of the act. As the disease advances these symptoms increase in intensity, the pain becomes more lancinating and pulsatile in character; a sense of swelling and tension is experienced in the anus and perineum; movements of the body are accompanied with severe pain; aggravated by attempts at stool, and more so by the act of micturition; the stream of urine is small, its passage prolonged, accompanied by much tenesmus. As the swelling increases in size complete retention may follow and last for days, requiring the use of the catheter, the introduction of which always produces a great deal of pain when it arrives at the prostatic portion of the urethra. Septic fever manifests itself after the earlier local symptoms, rigors often accompanying the onset of suppuration; not infrequently pain in the back and loins running down the thighs and the glans penis, and a sensation of a constant desire to go to stool, with great tension, weight and pulsation in the perineum and neck of the bladder. After four to six days, if the acute symptoms do not subside, suppuration may be suspected. This fact is easily determined by introducing the finger into the rectum; if the swelling then increases and communicates to the finger a sense of softness and elasticity in place of the firmness and resistance which before existed, an abscess cavity must be recognized. This examination often causes intense pain, and requires the utmost gentleness on the part of the surgeon. Pressure on the perineum may also reveal great tender-

ness, but rarely can fluctuation ever be satisfactorily detected there, owing to the depth and firmness of the tissues in spontaneous evacuation. The usual course for abscesses situated near the mucous surface of the prostate is to evacuate themselves either into the bladder or urethra. Sometimes the contents of an abscess will be discharged through a catheter in the attempt to relieve retention which is so common in these cases, the catheter breaking through the abscess wall. Undetected abscess of the prostate frequently burst into the rectum, and may or may not leave a fistulous opening between the bladder and rectum. Sir Henry Thompson cites a case where a patient of his while at stool suddenly evacuated two ounces of healthy pus, which was followed by a less amount each day until the cavity closed. My colleague, Dr. John B. Deaver, has furnished me with the notes of a case of tubercular abscess of the prostate which first made its appearance by pointing above Poupart's ligament on the right side, where it was opened with some temporary relief to the patient, in the belief that it was a tubercular abscess of the inguinal glands. A month later a similar lump made its appearance in the opposite groin, pointed, and was opened. The patient soon died. The post-mortem showed the prostate to be the seat of an abscess with tubercular deposits in the lungs and kidneys.

A somewhat similar case occurred in my own practice of tubercular character, where the pus was discharged by the urethra. The bladder symptoms had extended for a period of over ten years with the passage of blood and pus at times. The patient had been in the hands of most skilful specialists, but the exact character was not made clear until after death. The autopsy revealed a large tubercular abscess which had discharged into the urethra, with almost complete destruction of the entire prostate. Tubercular deposits were found spread over the surface of the bladder, the latter being contracted and thickened. There was also involvement of both kidneys and lungs.

From what has been said, the diagnosis of prostatitis running into abscess, or abscess itself, can with care be easily made out, if sufficient care is exercised and time is given to the examination of the patient. Prostatitis and abscess are most likely to be confounded with cystitis or vesical calculus, the former of which is by far the more common affection. The latter is easily excluded by its prolonged history and insidious character. It must be borne in mind, however, that both of these conditions may antedate an existing prostatic abscess.

The distinction between cystitis and prostatitis may be easily established by marking the following conditions:

PROSTATITIS.	CYSTITIS.
1. Not a common disease.	1. A common disease.
2. Pain chiefly restricted to perineum and anus, and accompanied by fulness.	2. Not so limited and little if any perineal or rectal fulness.
3. Pain violent and throbbing.	3. Pain is not throbbing.
4. Stream of urine diminished in size.	4. Stream of urine may be normal in size.
5. Pain aggravated during defecation.	5. Not necessarily so.
6. Retention of urine probable.	6. Improbable.
7. Digital examination of the rectum reveals marked swelling and tenderness of the prostate.	7. No enlargement, and little tenderness.

The treatment of prostatitis or abscess, constitutes the ordinary constitutional treatment for inflammation. The bowels should be gently opened by an enema. Purges are to be strongly contra-indicated.

So great an authority as Mr. Harrison says that he would just as much think of ordering a man to walk a mile with an acute synovitis, as to order a patient suffering from prostatitis a purge—still, the bowels are to be kept, if possible, in a soluble condition. The local treatment demands special attention. Bleeding affords more relief than any single agent, preferably by means of leeches to the perineum, ten to a dozen being applied. Some advise the application of leeches to the rectum by means of a specially devised tube for the purpose, with cupping of the perineum, until six to ten ounces of blood are removed. This is often difficult to accomplish and requires a degree of skill that is not always to be procured. Hot hip baths at temperature 100 raised to 105, but continued for a short time, and frequently repeated. Hot water thrown into the bowel often affords great relief.

Mr. Guthrie advises at times the washing out of the bladder with hot water in which a little acetate of morphia has been added. This may be done at the time the catheter is passed, in order to relieve the retention. The too frequent passage of the instrument is to be avoided, and in the acute stage of the disease the catheter should never be left in the bladder, as its presence only adds fuel to the flame. Some have advised the use in a similar way of ice. As a rule this is not grateful to the patient. Probably one of the most troublesome conditions to be met with is the retention which will require the use of a catheter from three to four times a day. The best instrument is the soft rubber one, about No. 14 French, a small instrument meeting with less resistance in passing through the inflamed prostatic urethra. Instant relief is often afforded by the sudden escape of pus by the rupture of the abscess. Pain is to be relieved by the free use of opium or morphia combined with belladonna by the mouth or rectum, preferably the

latter if the introduction of a suppository is not accompanied by too much pain. The diet is to be light and non-irritating.

If the inflammation goes on to suppuration, making itself manifest by fluctuation in the rectum, and accompanied by chill and other signs of pus formation, its immediate evacuation is imperative. As to this point authorities are at variance. Some prefer puncture through the rectum, others attempting to rupture the abscess into the bladder by the introduction of a sound, making pressure between the end of the finger in the rectum and the tip of the sound. A catheter with a stylet has been devised for this purpose.

Incision in the median line with a long straight bistoury, the finger of the left hand having been inserted into the bowel, the point of entrance being about three-fourths of an inch in front of the anus in the line of the raphe. The depth of such an incision should be from one and one-half to two inches; less than that will in all probability be worse than useless.

English, of Vienna, advises an incision similar to that practiced for lateral lithotomy, cutting down upon a staff. The latter operation seems to be only indicated when the abscess is confined to one lobe of the prostate, besides being a much more formidable operation for the average practitioner, and liable to be followed by more or less bleeding as in all probability the transverse perineal artery will be cut. I opened an abscess of the prostate in the median line following an obstinate stricture which gave immediate relief, the urine ceasing to flow through the opening in two days. It is sometimes well after the deep perineal fascia has been divided, to work down, or rather up, with a grooved director; in that way the abscess can sometimes be easily ruptured, even if only one of the lateral lobes are affected. The opening made through the rectum as advised by Mr. Collins, ordinarily is to be deprecated, although many cases will do well if so treated. Mr. Meade (*Medical Times*, Oct. 20, p. 60) reports half a dozen cases where this treatment was pursued, and strongly advocates it. If the surgeon could be assured that no communication with the bladder would follow; leaving a urethro-rectal fistula, there might be some grounds for advising this mode of dealing with an abscess in this region. If the abscess points, bursts into the peritoneal cavity working its way up through the recto-vesical space, nothing is left but to open the abdomen in the median line, wash it out thoroughly and draining—the treatment similar to that pursued for other pelvic collections of matter. A case similar to this is cited by Mr. Adams in his work on diseases of the prostate gland. It, however, terminated fatally by peritonitis.

The discharge of matter from an acute abscess is sometimes followed by prolonged suppuration,

forming what is known as a chronic abscess. However, this chronic suppuration is always due to some cause as imperfect drainage, as stricture of the urethra, or a tubercular abscess which refuses to heal, owing to the tubercular irritation coming from further up the urinary tract, etc. In all operative measures that may be pursued on the prostate the patient is to be etherized and placed in the lithotomy position, the bowel having been previously cleansed out with a warm enema of soap and water. After the contents of the abscess have been evacuated, it should be washed out with a solution of bichloride of mercury 1-2000. If it is of a tubercular character, scraping the abscess cavity with a curette and washing out with the same solution. This class of patients always require a very supporting treatment, quinine, cod-liver oil stimulant, and under the most favorable circumstances the ultimate prognosis is not very encouraging. From what has been said the surgeon, if careful, can hardly fail to make a satisfactory diagnosis if care and time is taken in making an examination, which is never complete without having thoroughly explored the rectum with the finger.

I have heard the late Dr. J. H. Hutchinson say, that far more errors were made through the imperfect examination of patients, than from ignorance on the part of the physician. The method of treatment by incision in the median line up and into the prostate, evacuating the contents of the abscess, is to my mind the safest, surest and most reliable means of dealing with this class of affections, and is preëminently the one to be strongly advised, giving perfect drainage and avoiding all risks of subsequent complications.

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MEDICAL PROGRESS.

HEREDITARY CATARACT.—DR. FUKOLA (*Internat. Klin. Rundschau*), was consulted in May, 1889, by A. R., female, æt. 30 years. She wished to have her eyes examined, to know if they were free from cataract, as that trouble had frequently presented itself in the family. The great-grandmother of the patient had marked impairment of vision, the nature of the trouble being unknown.

The grandmother of the patient had double cataract when 40 years of age. Of the thirteen children of this grandmother, nine had cataract, one of whom was the mother of the patient. They all developed the disease comparatively young, one at 20, and the latest at 40. The anxiety in this family is so great that some of them will not marry, for fear of transmitting the disease to offspring. An aunt of the patient had five children, three of whom had cataracts at the age of 20, 22, and 33 years. Another aunt that had emigrated to America, had two children out of ten affected. The mother of the patient had five children, three of whom had cataract. Two uncles also had one child, each, with cataract.

Another case was that of Mrs. S., who had a brother and sister similarly affected, as well as a grandmother and an aunt.

Elizabeth B. was operated for cataract when 62 years of age, her brother, of about the same age, being similarly affected.

Two children, brother and sister, presented cataracts. They were strong and healthy. No other members of the family affected.

The writer adds, at the close, that hereditary cataract generally affects young persons—in the first family, those from 20 to 40 years of age, the oldest 50. In all cases, the urine was carefully examined.

TOXALBUMEN.—(*Berlin Klin. Wochenschrift*, Nos. 11 and 12, 1890.)—BRIEGER and FRAENKEL describe their investigations of the question whether pathogenic bacteria work their mischief by the intervention of chemical poisons which they may originate during their growth and development. Of course, the first condition for successful inquiry was to employ pure cultivations of the organisms experimented upon. Basic bodies, denominated "toxine," had already been found in several pathogenic microorganisms, such as the bacillus of typhoid, tetanus, cholera, etc. Yet it was found that this toxine did not invariably call forth all the phenomena of the infectious diseases due to the bacilli, from pure cultivations of which it had been obtained; the supposition, therefore, seems fair that, besides the already found chemical bodies, there were other substances which played a momentous part.

Brieger and Fraenkel considered that Löffler's bacillus of diphtheria was well adapted for their purpose, because it is now beyond doubt that this organism is the genuine cause of diphtheria.

Löffler had already called attention to the fact that this bacillus, when inoculated on animals, guinea-pigs and pigeons, colonized only the immediate neighborhood of the infected spot, yet grave alterations of texture and organs, and speedy death of the animals experimented on followed.

This connection of events could only be ex-

plained in this way—that the bacilli produced, by their local multiplication, a substance of exceedingly poisonous properties, which spread over the whole organism and, independently of the bacteria, did its deadly work.

Brieger and Fraenkel consider that they have proved that Löffler's diphtheria bacillus engenders in its pure cultivation a poisonous, soluble substance separable from the bacteria, and which, when injected into susceptible animals, calls forth the same phenomena as the injection of the living microorganism. The authors also have settled that this substance is destroyed by a heat of 60° C. (140° F.); that it can stand a heat of 50° C., even in presence of excess of muriatic acid. This last fact itself speaks against the supposition that the poison of the diphtheria bacillus is a ferment or an enzyme.

Further examination of this substance showed it was not a ptomaine or toxine; no crystalline substance, save kreatinin and cholin, was obtained. Shortly summing up their investigations, the authors seem to have discovered in the diphtheria bacillus a substance belonging to the albumen series of bodies, which has poisonous properties, and causes the phenomena of diphtheria when injected. They propose to give it the name of "toxalbumine." In the living body, they consider that the bacteria build up and separate their toxalbumine from the albumen of the tissues.

Brieger and Fraenkel also examined typhoid, tetanus, and cholera bacteria, and staphylococcus aureus and watery extracts of the internal organs of animals killed by anthrax, in the same way as they had examined the diphtheria bacillus, and found in all of them bodies which, according to their chemical behavior, were albuminoids, were poisonous, and could therefore be aptly called toxalbumines.

The road from normal constituents of the body to substances of the most dangerous kind seems a very short one, and our organism itself may be looked upon as the proximate cause of morbid conditions, let loose by the life-activity of bacteria.—*Edinburgh Med. Journal.*

CAFFEIN IN ADYNAMIC CONDITIONS.—PROF. HUCHARD, before the Société Médicale des Hôpitaux, described the excellent results obtained by the hypodermatic use of this drug in a severe case of measles, attended by ataxic adynamia. He is of the opinion that the drug is indicated in all adynamic conditions. As early as 1871, he pointed out that caffein has much the same effect on the heart muscle as an electric current upon paralyzed muscles. In general, the dose of the drug has been too small; 4 grs., and in very severe cases as high as 15 grs. Lépine, in 1882, stated that much larger doses might be given, and in cases of asystole he gave from 30 to 45 grs. daily, without unpleasant consequences. The drug has

not only a diuretic effect, but it is a heart tonic as well.

In the discussion, Desnos remarked that hypodermatic injections of caffein frequently caused pain and abscess. Huchard said that these results could be avoided if the injections were made deeply, between the muscles; in the eight years that he had employed the drug, he had only seen two or three abscesses, and they healed readily.

TREATMENT OF GRAVE AÆMIA BY SUBCUTANEOUS INJECTIONS OF IODIUM CHLORIDE.—DR. ST. HUZARSKI (*Centralblatt für Gynäkologie*) describes an interesting case of severe anæmia following a tedious but not difficult labor. The uterus contracted well, but shortly after labor was ended, it relaxed and a moderate hæmorrhage took place. The patient presented alarming symptoms, was restless, with weak pulse, and complained of great prostration. Hypodermatics of ether and camphor were given, which produced only temporary relief. The patient soon relapsing into a condition where death seemed imminent. In this emergency a large rectal injection of solution of common salt, which immediately improved all the symptoms, the pulse became stronger, the color returned to the lips. One hour later he was again called and found the patient in extremes. A subcutaneous injection of 1,000 grams of a 6 per cent. solution of sodium chloride was given. This injection was immediately followed by improvement in all the symptoms and the patient went on to slow convalescence.

OREXIN.—DR. GEORGE MILLER has recently (*Therapeutische Monatshefte*, June, 1890), added his experience in the use of this new stomachic. In five cases in which it was given not the slightest improvement in the appetite was noticed. The drug was given in from 3 to 7 gr. doses daily, to patients suffering from various conditions—intestinal tuberculosis, diarrhœa, phthisis, vomiting and diabetes, in which a persistent loss of appetite was noted. While five cases is but a limited number from which to draw conclusions, yet it can hardly be said that this much lauded drug is a specific.

SALICYLATE OF SODIUM IN PRURITUS.—DR. WERTHEIMER reports the case of a woman suffering from universal cutaneous pruritus of nervous origin, for the relief of which he tried salicylate of sodium in fifteen-grain doses three times a day. After the third dose she enjoyed the first night's undisturbed sleep she had had for a long time, and by the fourth day all itching had entirely ceased. Smaller doses were given for a few days longer, and she has since remained free from any return of the pruritus.

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SATURDAY, AUGUST 16, 1890.

CREASOTE IN THE TREATMENT OF PHTHISIS.

The treatment of phthisis still leaves much to be desired, and notwithstanding the notable advances of the last few years, a recent writer says that the progress in this disease has an intimate relation with the size of the purse. This is only another way of stating that the various methods so far devised are adapted only for people in comfortable circumstances. While the remark above quoted was made with especial reference to the climatic treatment of pulmonary tuberculosis, the same is true of measures recently devised. The pneumatic cabinet, Weigart's hot air method, the inhalation of nitrate of silver, as well as other modifications of these forms, all presuppose expensive mechanical appliances or the services of trained attendants, that can only be secured by the comparatively wealthy, or in the wards of our larger hospitals.

A cheap and simple remedy, easy of application, that will take the place of the routine and sufficient cod-liver oil and tonic prescriptions, in our large ambulatory clinics, is a desideratum; whether it has been found in creasote, remains to be seen, but there is certainly sufficient evidence now at hand to justify a more extended trial of the drug than it has yet received.

It is nearly ten years since GUMBERT and BOURCHARD published their experience with the drug, and in that time many contributions have appeared in medical literature. The most important of these, that of SUMMERBRODT (quoted by the *Med. Chir. Rundschau*) who reports 5,000 cases treat-

ed, during the past nine years, by increasing doses of creasote.

According to some writers the dose heretofore employed, has been too small. BRGDUORITCH (*Meditzinskoe Obozrenië*), himself a sufferer from phthisis, took in four months four ounces and two drachms of creasote. The drug was exhibited by the stomach in capsules, freshly prepared, just before using. Unpleasant symptoms were noticed only when from 12 to 20 minims were taken in an hour, when he suffered from giddiness, cardiac palpitation, small pulse, and general weakness, with pallor and anxiety. The results in his case was some diminution of dulness and a cessation of the crepitant râle. The number of the tubercle bacilli remained about the same. DR. SCHETELIG (*Pharmaceutische Post*) claimed that the drug was free from irritating properties, and that it could be given in 15 to 25 minims daily, for months at a time.

In 1889, DR. BOURGET described his "intensive" method of treating phthisis (*Traitement intensif de la tuberculose par le guayacol et la creasote de hêtre, Corr.-Bl. f. Schweiz. Aerzte*) which consisted essentially in the administration of guaiacol internally, in wine or cod-liver oil, and the inhalation of creasote, together with inunctions of creasote dissolved in cod-liver oil. In this way comparatively large quantities of the drug were rapidly introduced into the system.

Two later writers who claim signal success with creasote, both used the drug hypodermatically. LÉPINÉ (*La Semaine Médicale*, June 25, '90) recommends the injection of creasote dissolved in oil, into the cellular tissue. The quantity that may be used in this way far exceeds that which is tolerated by the stomach. DR. COLLARD, of the Hôpital des Anglais, (*Gazette Med. de Liege*) has also used the hypodermatic method with excellent results. The most of his patients were well advanced in the disease, frequently presenting marked infiltration with the formation of cavities. One patient received in forty days, seventeen ounces of cod-liver oil containing 540 grains of creasote. The drug was carefully incorporated with the oil, which had been previously sterilized. Occasionally the oil would reappear at the point of injection; one patient who had been for a little time out of the hospital, was readmitted to the surgical wards for one of these accumulations in the lumbo-dorsal region; it was

opened and a considerable quantity of oil evacuated, together with some pus.

Dr. Collard observed an improvement in all the patients treated, the night sweats disappeared, cough lessened, and the bronchial secretion decreased. One peculiar effect noted was the great prostration with fall of temperature that frequently followed the injections. This was experimentally found to be due to the excessive quantity of oil employed, as the same phenomena were noted when the oil alone was used. He also determined that the oil of sweet almonds, and olive oil, were readily absorbed by the cellular tissue, which was not true of cod-liver oil. Therefore he recommends that only olive oil or oil of sweet almonds be used, and that they be reduced to the smallest quantity: one to ten—or perhaps even one to five. No great pain was caused by the injections, particularly if they were made into the deep cellular tissue, and no disturbance of the bowels, digestion or circulation, was observed.

DR. AUSTIN FLINT (*N. Y. Med. Jour.*), and DR. BEVERLY ROBINSON (*Amer. Jour. Med. Sci.*), have used creasote and found it to have considerable value. Dr. Robinson recommends the administration with whisky and glycerine in the proportions of six minims of creasote to two ounces of the former, and one of the latter.

An interesting speculation is as to the possible action of creasote. Most writers agree that it has no direct action upon the bacilli (Cornet, *Ztschr. f. Hyg.*, Collard and others). While these writers could not determine that the bacilli were lessened, it is to be remembered that our present methods of estimating bacilli in sputum are so imperfect, that these statements may be taken with some allowance. While creasote does not directly kill the bacilli, it may so lessen the secretions, or alter the mucous membranes of the respiratory tract, that their development is hindered. The probability of this explanation is heightened by the fact that creasote is excreted largely by the lungs, and the odor of the drug can be detected in the breath shortly after its administration.

To sum up the recent literature we are justified in saying that much is to be expected from the use of creasote in all stages of consumption. When advanced so far that cavities have formed a cure can hardly be looked for, but even in these cases a marked improvement in the more

distressing symptoms may be expected. The drug is preferably administered hypodermatically, dissolved in oil of sweet almonds in the proportion of one to ten. The daily dose is from three to fifteen minims. Pure beech-wood creasote should be used, to the exclusion of the cheaper commercial varieties.

ELECTRICAL EXECUTION.

At last the first criminal execution by means of electricity is an accomplished fact, and KEMMLER, the brutal murderer, is dead. We do not protest against execution of the death penalty as the extreme expression of the law against so foul a crime, but in the name of all that is human, we do protest against a possible recurrence of such a procedure as this—not as to the method, but as to its manner. Let the majesty of the law be manifest by the dignity and surety of its action, but never again let the suspension of the fixed fact become the instrument of criminal torture by prolonging on the part of the victim a suspense, far worse than death itself. And if for wise reasons the laws decree that executions shall be conducted privately, then why permit the horrible delineation of their utmost details with gusto and with talent on the part of the press, worthy of a better cause. If pandering to the basest of human passions, reporters are to run riot in their descriptions of such scenes, then unbar the gates and give to the masses an equal chance and a fair show, even though the revenue of the public press be cut off.

As to the use of electricity in the execution of criminals, we believe the decision of the courts to be wise and in the interest of humanity. The studied effort on the part of reporters to produce a blood-curdling sensation will doubtless exert a more or less prejudicial influence upon the public mind; but, had the same talent been employed to depict the horrors of the gibbet the outcry against hanging would be even more emphatic. The application of the electrical current is as surely instant and as certain as is the fatal drop, and once the plan adopted we believe that death by electricity will seem a far more reasonable procedure than that which permits the dangling of a struggling body for an uncertain period between the heavens and the earth, as though it were unclaimed by either. The English press,

true to its traditions, and ever at war with innovations, is unmeasured in its condemnation of this method.

The *London Standard* says: "The scene can be described as a disgrace to humanity. It will send a thrill of indignation throughout the civilized world. We cannot believe that Americans will allow the electrical execution act to stand."

The *London Chronicle*, commenting upon the killing of Kemmler by electricity, says the scene was worthy of the darkest chambers of the Inquisition in the sixteenth century.

The *Times* says it would be impossible to imagine a more revolting exhibition. It advocates a lethal chamber in preference to the use of electricity.

With reference to these extravagant expressions we can only say, that familiarity with the working of the gibbet must have rendered it less repulsive to English eyes than to ours, but whether death in the mid-heavens be preferable to death in an easy-chair, is hardly a question for such prejudiced minds to pass upon. The suggestion so often made and now referred to, of a lethal chamber as best ensuring a painless death, will doubtless be most carefully considered in its time, and as the world moves on, anæsthesia and electricity each will have its vigorous advocates, *but* as to the old time gibbet—that relic of the darkest age—we confidently believe it has had its day, and that having served its purpose—*it must go!*

BOARDS OF HEALTH AND LEPROSY.

The recent recognition in New York of a case of leprosy in a young Spanish-American, pursuing his studies in that city for about a year, was the occasion of a most remarkable example of officialism on the part of the Board of Health of that city. With no consideration of the facts that there were no objections to the boy residing with his family, and that their pecuniary circumstances were such as to permit the employment of excellent physicians, the unfortunate patient was forcibly removed to a quarantine hospital, isolated, and considerable newspaper notoriety given the case. It might have been supposed that the experience of this Board in the case of suspected yellow fever in the late RICHARD PROCTOR, wherein his forcible removal from his hotel, in rainy weather, dissipated any chance of recovery, would have

taught the lesson of *festina lentè*. Not that any fatal result will possibly ensue in this case, but because there is not a scintilla of evidence that the contagious character of leprosy justifies such treatment, more than that gonorrhœa, syphilis, tuberculosis, typhoid fever, or the exanthemata, should be similarly dealt with.

Only once or twice has official zeal, in any of our States, manifested itself in such a manner. And that it is not the common opinion of the representatives of our State and local boards of health that lepers should be isolated in this country, is demonstrated by the refusal of the conference of those bodies held in Nashville, just preceding the meeting of the Association, to pass a resolution demanding such treatment of these unfortunates. In fact, such a resolution would have been a virtual condemnation of the efficient boards of health in South Carolina, Florida, Louisiana, Minnesota and California, that have carefully considered the question, on account of the greater numerical existence of cases of leprosy than in any other State. And in most of these States, the disease affects aliens solely; though occasionally isolated cases of leprosy have occurred in individuals that have never been out of a limited district in which leprosy was unknown.

If leprosy was even moderately contagious in the United States, it would certainly be much more prevalent than now, for it has existed here more than a hundred years. We know of families in this country in which a mother, perhaps a daughter or a son, were lepers, and yet the other members have remained free from the disease to a ripe old age. Would it have been justifiable to separate the diseased from the healthy, depriving the latter of the enjoyment—melancholy though it be—of caring for those dear to them during the many years the disease may take to run its course?

Considering the divided opinion of authoritative dermatologists regarding the contagious character of the disease at all; and disbelieving that the experience of certain tropical countries, in which poor food, lack of clothing and shelter, and deficient stamina, are inciting causes of leprosy, will find a parallel in the infinitely more sanitariously situated population of the United States, we would, in the name of rational medicine, bespeak a more considerate action in the treatment of lepers, than that which recently governed the New York Board of Health.

EDITORIAL NOTES.

INTERNATIONAL MEDICAL CONGRESS.—The Tenth International Medical Congress opened in Berlin, Aug. 4. Herr von Boetticher, Chief of the Imperial Home Office and representative of the Chancellor; Herr von Maltzahn, Imperial Treasurer; Dr. von Gossler, Prussian Minister of Ecclesiastical Affairs, Instruction and Medicinal Affairs, and Herr Herrfurth, Prussian Minister of the Interior, represented the German Government at the opening ceremony. Prof. Virchow, President of the Congress, made the opening address. He expressed the Emperor's sympathy with the objects of the Congress, and said that Germany would devote herself to science and humane efforts.

Two thousand five hundred German and 2,500 foreign doctors, including 500 physicians from America, were present. Herr v. Boetticher made an address welcoming the delegates on behalf of the German States, and Dr. von Gossler welcomed them on behalf of the Educational Department. An address welcoming the delegates to Berlin was made by the burgomaster of the city.

Dr. Hamilton, Surgeon-General of the United States Marine-Hospital Service, who was Secretary of the Congress held last year at Washington, and others made speeches in response to the addresses of welcome.

Among the British doctors attending the Congress were: Sir James Paget, Sir Andrew Clarke, Professor Stewart of Edinburgh, and Professor Stokes, of Dublin. Of the American physicians present at the Congress, and of the papers submitted by them, we shall speak more fully in our next issue.

An invitation had been extended to the Congress to hold its next meeting in Chicago in 1893, in connection with the World's Columbian Exposition, but Rome was selected.

Professor Virchow, President of the present Congress, read a letter from Sig. Crispi, the Italian Prime Minister, stating that he was rejoiced that Rome had been selected as the place for the next meeting, and welcoming the medical profession to the hospitalities of Italy.

The festivities attending the Congress have formed a prominent feature. There has been a constant succession of banquets, balls, and receptions. At the opening banquet, at which Prince Theodore, of Bavaria, and Ministers Gossler and

Boetticher were present, Dr. Lyden proposed the health of Minister Phelps, who, in his response, pointed to the presence of 623 Americans as most eloquent testimony to the interest taken in the Congress by the medical profession in America.

Mr. Phelps marked the close of the Congress with a dinner given to Surgeon-General Hamilton and other army and navy officials. Among the guests were Baron von Bunsen, Gen. Wilson, Col. F. Jones, Dr. Jacobi, Prof. Lusk, and Capt. Bingham.

Prof. Virchow, in his closing address, noticed the fact that the Congress had brought together the greatest number of scientists ever congregated. The proceedings, he said, had been in every way worthy of the medical science and had been characterized by brotherly regard. Dr. Billings, of Washington, expressed the thanks of the members to the organizers of the Congress.

On the third day there had been not less than 7,000 cards of membership issued. Of this number, there were 623 American names enrolled, 421 were Russian, 353 were British, and 173 were French. The "boycott" by the French, which was first asserted and then denied, proves to have been very nearly successful—a fact that is regrettable by the medical world at large. According to some of the press cablegrams, there can be little doubt that the hotel accommodations, and some other of the arrangements of the Local Committee, have been overstrained, but the indications are that the scientific proceedings have been almost unexpectedly interesting and instructive, and in all of which American contributors have not been behindhand.

A MUNIFICENT BEQUEST TO THE MEDICAL COLLEGE OF INDIANA.—Dr. William Lomax, an aged and wealthy physician of Marion, this State, has given his estate, valued at \$100,000, to the Medical College of Indiana. He at first desired to present the money to the college through Depaw University at Greencastle, thus benefiting both institutions, but making the Medical College a department of the university. In this desire he failed, and in consequence now donates his estate outright to the college. It was found, when it came to arranging the preliminaries, that various obstacles stood in the way of the acceptance of the gift by the college as it was constituted, and in order to facilitate matters and

make everything satisfactory to donor and recipient it was determined to reorganize the institution. The necessary changes have been effected, the members having among their number Governor Hovey and the Hon. William H. English.

THE PLAGUE.—This disease has again appeared in malignant form in the little village of Kalé-Daraéphan, in Persia. The inhabitants number 280, and up to June 14, forty-two cases were reported, of which twenty-six were fatal. The characteristics of the disease of special note were, engorgement of axillary and inguinal glands, subnormal temperature, 40°; anthrax, and bluish eruption of the skin. In Spain the disease is at a stand, there being few reports of new cases. The Commission appointed by the Spanish Government to investigate the disease, have pronounced it true Asiatic cholera. Rigid inspection is ordered by the French Government of all travelers arriving on its frontiers from Algiers or Spain, and reports of such arrivals in Paris are at once reported to the prefect of police.

DUSTERS AND DISEASE.—A circular of information has been prepared by Dr. Benjamin Lee, Secretary of the State Board of Health of Pennsylvania, on the precautions to be taken by the patient and others against consumption. In addition to the usual counsel given in such circulars, the feather duster finds prominent mention as follows:

The duster, and especially that potent distributor of germs, the feather duster, should never be used in the room habitually occupied by a consumptive. The floor, wood work, and furniture should be wiped with a damp cloth. The patient's clothing should be kept by itself, and thoroughly boiled when washed. It need hardly be said that the room should be ventilated as thoroughly as is consistent with the maintenance of a proper temperature.

The feather duster is probably the least sanitary of all the so-called cleansing utensils to be found in our homes. In the sick-room it is little better than an abomination.

UNIVERSITY OF THE CITY OF NEW YORK.—The University this year commemorates its fiftieth anniversary. Its Dispensary and Laboratory buildings, recently erected, will add materially to its facilities for teaching. We especially note the requirement of an entrance examination, on the part of those who do not possess an academic or

scientific degree, as a condition to graduation. Thus, one by one, the colleges are following the good example which was set by other medical schools which we could name, a good while ago. During the fifty years, 5,832 students have received the degree of M.D. from this institution.

A FEMALE DENTAL SURGEON.—Miss Anne F. Reynolds, D.D.S., holds the first dental degree that has been granted in Massachusetts. She graduated June 19, from the Boston Dental College. She also received the first prize for senior honors.

DISTINCTION FOR DR. ROSSE.—Dr. Irving C. Rosse, of Washington, has lately had conferred upon him the honorable distinction of F. R. G. S. by election as fellow of the Royal Geographical Society, through the recommendation of Sir T. Fowell Buxton, Bart., and Mr. George Barclay, of the British legation. The compliment is a recognition of services as traveller and explorer, more particularly in the Siberian Arctic, where the doctor was first to scale Herald Island and to land on Wrangel Land during the search for the exploring yacht Jeannette and the missing whalers.

SENN'S work on Surgical Bacteriology has been translated into the French by Broca.

PRIZES.—The Barcelona Medical and Surgical Academy has offered a prize of 1,500 pesetas for an essay on the treatment of acute febrile processes, with especial reference to the use of antipyretics. The second best essay receives 750 pesetas.

CHOLERA IN ARABIA.—There has been an extension of cholera to Mecca during July, which cannot be regarded otherwise than a most unfavorable prognostic of the spread of the pestilence beyond Asia. The number of deaths at Mecca, in the last week in July, is reported to have averaged eighty *per diem*. All ports along the Red Sea, in the Levant and Asia Minor, have been quarantined as against the pilgrims returning from the Holy City.

CREMATION seems to be making rapid progress upon the continent. The crematories at Milan, Gotha, and London, all report an increase in the number of incinerations while that in Paris heads the list with 532. A cremation society has recently been organized in Stockholm.

TOPICS OF THE WEEK.

SOLDIER SURGEONS.

And wherefore, soldiers! to our country's shame,
Is there no record yet of Thomson's name?
No stone to mark how that devoted one
By the Red Alma, when the fray was done,
In mercy to the wounded of the o'erthrown,
Remained to do his Godlike work—alone?
Where'er he looked were marks of fire and steel,
Spent shot and shell, dismounted gun and wheel,
The broken sabre and the cloven helm—
All that could daunt the soul or overwhelm;
Corpses in heaps, the dead and staggering steed,
And groups of wounded in their direst need!
But yet the gallant Scot maintained his post,
Beside a remnant of the Russian host,
Whose wounds—such wounds! his orders were to dress,
And soothe the sufferers in their mad distress.
Foes to a man—right pleasant patients they—
Eight hundred Calmucks who had lost the day;
But down he knelt beneath the lowering heaven,
And, in pursuance of the order given,
Went to his duty with a manly heart,
Soldier and surgeon, true to either part.
With only one attendant who could speak
His country's tongue, amid increasing shriek
And groan, and wail, and cry, woful to hear—
The raven and the vulture hovering near—
There, unappalled by all these sounds and sights,
Nobly he toiled two fearful days and nights.
Limb after limb examined and bound up,
And poured the cordial balsam in the cup,
Desisting only when himself struck down,
The unconscious winner of a world's renown.
No better they who, battle blade in hand,
Support the martial glories of their land,
Than he who, by no stirring passions warmed,
Flings down his sword when all beside are armed,
And while the bullets whistle round his head,
In field, or trench, perchance his gory bed,
Soothes and sustains his comrades under fire
With a devotion no neglect can tire.
Neglect! by Heavens! they were a sorry crew
Could well forget the deeds such heroes do!
The lives they save, the courage men reveal
Who rush on death, confiding in their zeal.
Which most a nation's gratitude deserve—
Those who in peril's hour show skill and nerve,
Or they, the brainless chiefs, whose'er they be,
Who could not make between their camp and sea,
The two ends of a wretched roadway meet,
That starving thousands and their steeds might eat,
Though food for both, on Balaclava's shore,
Rotted in heaps within their cannon's roar?
Neglect! Up, every man now sound and whole,
Whose wounds were salved before Sebastopol—
Up, all whom ill-paid Science rescued thence
From desolating plague and pestilence;
And one and all, in your preserver's case,
Call on a thankless Government to place
Honors on breasts as yet unjustly bare!
Were these the men that lost an army there?
In siege or battle, under any sun,
Our soldier surgeons yield the palm to none!

—SURGEON-MAJOR, *Brit. Med. Journal*.

DRUG ADULTERATION.

The New York State Analyst has, during the past year, examined 417 samples of pharmacopœial drugs, purchased from twenty different druggists, and 115 samples of cream of tartar procured from grocers. Of

the totality of 532 samples 43.8 per cent. were found of good quality, 10.2 per cent. fair, 24.4 inferior, 6.2 per cent. not as called for, 4.5 excessive, and 10.9 per cent. entirely fictitious. Of the samples of cream of tartar thirty were genuine, twenty-seven were adulterated, and fifty-eight fictitious. The state analysts are doing a great work, so are the committees on adulteration of the state pharmaceutical associations, but their disclosures of these frauds will come to naught unless prosecution and punishment are meted out to those guilty of these dishonest practices. Adulteration and substitution, harmless or harmful, are crimes. There is no gradation from right to wrong, the line of separation is sharply drawn, and he who deliberately sophisticates an article, he who sells it, and he who consents to its sale, without protesting, are alike guilty. These are plain words, but they are true. Nor is ignorance a valid excuse. The druggist who whines that he did not know his wares were below standard cannot therefore be absolved from fault. It is his business to know, and he is culpable, if he does not test his drugs and sell them on their merits. Dishonesty is bad enough in any line of trade, but when it touches the traffic in food and medicine, it is specially abhorrent.

It is seldom that adulteration is practiced from any other motive than that of a desire for pecuniary gain. Were it possible to eliminate from the make-up of mankind the "love of money which is the root of all evil," the millenium would be at hand. Why does the manufacturer produce, the jobber handle, the retailer buy and dispense, an inferior or fraudulent article? Merely for a few cents additional profit. The druggist sells knowingly, an adulterated cream of tartar, and asks "Where's the harm? It injures no one." Possibly it does work no special bodily injury to the consumer, perhaps, also, no mention should be made of the additional damage to the dealer's already badly blunted moral sense, but if the fraud be discovered the pecuniary damage would be such as to show him that there is harm. The argument of financial loss is the only one that appeals with much force and weight to this variety of druggist.

Much, not all, of the prevalent adulteration is effected by the first handler or producer, but it takes two to make a bargain, and it is necessary that he find a market for his goods. If retailers would not handle adulterated or inferior drugs, the wholesalers and manufacturers would not offer them. It is useless to attempt the reform of the wilfully dishonest druggist. It is from the large majority of honest intentioned men that the protest must come. Examine, test, prove your drugs, force the dealers to furnish honest articles, and sell nothing under misrepresentation. Do right for right's sake, frown upon dishonesty because it is evil, especially that dishonesty whose existence depends primarily on monetary gain.—*Pharmaceutical Era*.

MEDICAL CONGRESS IN JAPAN.

It was inevitable that the Japanese who have shown so remarkable a power of assimilating the details of Western civilization should before long hold a Medical Congress. Accordingly, the first gathering of the kind in Japan was held at Tokyo, from April 1st to the 7th. In spite of the

somewhat inauspicious day chosen for the opening, the meeting was a great success, though only two foreign doctors were present; as there are nearly forty non-Japanese practitioners at Tokyo and Yokohama, some disappointment was felt that more of them did not grace the assembly with their presence. It is hinted, however, that the Invitation committee was chiefly responsible for the absence of the foreign element. The proceedings were of the usual kind: addresses on various more or less interesting subjects being delivered, cases and inventions, new and old, exhibited, etc. Complaint is made in some quarters that the scientific communications were not sufficiently inspired by the *genius loci*, little or nothing of special interest to the Japanese people being contained in them. As compared with other congresses, festivities seem to have been few and far between, though we are told that on the last day there was a "general social gathering in Shiba Park, at which there was an ample provision for refreshment."

HOW RESPECT FOR SCIENCE IS ENFORCED IN RUSSIA.

Le Journal de Médecine de Paris, June 22, 1890, is responsible for the following: "A correspondent at St. Petersburg writes, 'An extraordinary affair at Odessa has come to my knowledge. There is in the city in question an Institute of Bacteriology, founded and maintained by the municipality. The director is a Dr. Bardach, a pupil of Pasteur, who superintends the vaccination of cattle against anthrax and Siberian plague, after the method of Pasteur. The Russian Imperial Government sent circulars to all the landed proprietors of the South of Russia, requiring them to have their cattle vaccinated, and the brothers Pankvatjeff, two millionaires, accordingly sent for Dr. Bardach the other day to come to their estates in order to vaccinate their cattle. Unfortunately, the doctor made some mistake in the vaccine virus, and in two days there died 3,552 sheep, 1,200 horned cattle, and some hundreds of horses. Their owners brought an action against the Bacteriological Institute, that is to say against the city of Odessa, and demanded damages. The case was tried a few days ago. The counsel for the city stigmatized the brothers Pankvatjeff as persons knowing nothing of scientific matters, and stated that he was at a loss how to characterize 'persons who dared attack the great and celebrated *savant* Pasteur.' In short, he pleaded so effectually that not only did the brothers Pankvatjeff fail to obtain a verdict, but the tribunal condemned them to pay, in common, a fine of 3,500 francs, as well as the costs of the trial, *pour leur apprendre à mieux estimer la science.*'"—*London Med. Recorder.*

VACCINATION IN INDIA.

A valuable communication on the prevalence of small-pox in Calcutta, read before the Medical Society by Dr. K. C. Bose, of that city, and reported in the *Indian Medical Gazette*, contains a great deal of most interesting information concerning the gradually awakening attitude of the people of India in regard to the prophylactic influence of vaccination. Dr. Bose declares that he has never seen small-pox occur in a revaccinated person, and

he very frequently vaccinates those smitten with the disease on the second day of the fever with the most encouraging results, and vaccination during the incubative stage he considers to be, at his hands, the means of preserving very many lives. On the question of popularizing vaccination among the natives, the deputy superintendent of the process for Calcutta declares that Dr. Bose's assistance has been effectual in enabling the protection to be introduced into a good many respectable houses, the dread excited by the prevalent epidemic being used as an important agent in the conversion of the people. He firmly believes that, as its protective virtues are appreciated, vaccination will grow in favor and become general bye-and-bye.—*London Med. Recorder.*

RELICS OF BARBARISM IN THE GERMAN UNIVERSITIES.

With all their learning and teaching power, the German universities retain some rather unlovely traditions, of which duelling is perhaps the most redolent of barbarism. True, the vast majority of "hostile meetings" between undergraduates seldom result in more than facial disfigurement; but sometimes, when firearms are the weapons chosen instead of swords, danger is inevitable, and even death may occur. A melancholy illustration of this has lately been witnessed at Wurzburg, where a highly promising and amiable "candidatus medicus" lost his life. Paul Fleurer, the unfortunate youth in question, seems to have played a truly chivalrous part in the encounter; for after a first, and then a second, interchange of shots, he held out his hand twice in token of reconciliation with his antagonist, but in vain. A third interchange was insisted on, and poor Fleurer fell mortally wounded, and died in a few minutes. At his funeral, which was attended by the students in large numbers, and with all the insignia of mourning, *oraisons funèbres* were delivered, the principal of which referred to the deceased as the victim of an "unfortunately still prevailing prejudice"—surely an inadequate condemnation of a practice which finds no favor in the better-mannered academic life of Great Britain and America.—*The Lancet.*

LIBERALITY OF A CONTINENTAL SURGEON.

Examples of liberality in medical men are never very far to seek, though it is, of course, but rarely that members of our profession are sufficiently wealthy to make gifts of large sums for the public good. An excellent example of what some of the more fortunate of our continental brethren are able at times to do in this respect has recently occurred. Prof. Sklifasovski, the eminent Moscow surgeon, having performed two operations on wealthy patients in Odessa, received from one of them about 200 guineas, and from the other a still more substantial fee, amounting to more than £1,200. The University of Odessa has not possessed a complete medical faculty, but this is now being created, and Professor Sklifasovski has presented the whole of the larger fee to the new faculty, for the purpose of endowing a scholarship for poor students.

PRACTICAL NOTES.

CHRISTOPHER ON SUMMER COMPLAINT.

The true pathology of this disease, or group of diseases, is by no means settled. Dr. Christopher discusses the subject in an interesting paper. He points out that the pathology of the disease comprises three divisions: (a) its morbid anatomy; (b) its bacteriology; (c) its chemistry. It has become the custom to discuss this disease, from one or other standpoint, according to the fancy of the writer, and with little or no reference to the other divisions of the subject. A case of summer complaint presents symptoms on the part of the bowels, on the part of the circulation, of the respiration, the kidneys, the skin, and the great nervous centres. The bowel symptoms are usually the most prominent. The odor of the stool is a most important feature; practically, it is always offensive, and in a great proportion of cases can be described as either sour or putrid. Every such stool is a fermenting mass, and the odor enables us to recognize two great classes of fermentations, one giving rise to *acid* smelling stools, the other to *putrid* stools. A putrid stool means fermentation of albuminous or colloidal material. Nitrogenous tissue is necessary for putrefaction. An acid stool, on the other hand, has its origin in the carbohydrates, and fats of the food. It is true that proteids contain a carbohydrate nucleus, and in decomposition may give rise to carbohydrates, or fatty acids, but the amounts so set free are merely nominal. The anatomical lesions in summer complaint are utterly inadequate to explain the symptoms, especially in acute cases. The best proof of the subordinate position held by lesions is the fact that the severest cases, those which terminate fatally within four days, have no lesions at all. They are to be regarded as the results of fermentation, and are more marked in proportion to the duration of the disease. They assist in prolonging the disease, and in all probability act by providing a habitat for the microorganisms. The etiological importance of hot weather in the production of the diseases has been demonstrated beyond question. Improper feeding and overcrowding must be classed as factors in the production of the complaint. The diet during the attack should be determined by the conditions within the bowels, as shown by the stools. In putrid fermentations, carbohydrates should constitute the food. If a case of recent putrid intestinal fermentation be limited to a non-albuminous diet, the putridity will cease in twenty-four to forty-eight hours. In a case which has acid stools from the beginning, the food should be albuminous, that is white of egg. Here trouble is liable to arise from the starting of a putrid fermentation by the albumen. Ordinarily, how-

ever, the disease can be checked before any such trouble arises. Milk, containing, as it does, both proteids and carbohydrates, should be prohibited in all forms of intestinal fermentation. Nursing babies, with severe summer complaint, should be taken from the breast. All food administered, of whatever type, should be aseptic. In addition to regulating the diet on the foregoing principles, the treatment should include laxatives and intestinal antiseptics. Opium is contraindicated, except in persistent acid fermentation, which threatens to produce anatomical lesions.—*London Medical Recorder*.

GLUCK ON THE PREVENTION OF THE TOXIC EFFECT OF COCAINE.

In eye and ear practice Dr. Gluck has found the toxic effect of cocaine, especially in adults of middle life, a great drawback to its use. Another inconvenience is that simple solutions of cocaine do not remain stable. After twenty-four hours a solution begins to lose its anæsthetic properties, and in a few days he finds that it becomes useless. After a series of experiments the author has found that by combining phenol with cocaine the objectionable features are removed. For over a year he has used a solution made according to the following formula, since which he has not observed any toxic effects of the drug: R. phenol, gtt. ij; aqua destillata, 3j; shake until solution is perfect, then add cocaine hydrochlorate, gr. x. The advantages Dr. Gluck claims for this combination of cocaine and phenol are: toxic effects prevented; anæsthetic effect increased; absence of congestive reaction; decomposition of the solution prevented; and, lastly, solution rendered aseptic.—*London Medical Recorder*.

DRESSINGS FOR FRACTURES.

Dr. Treuthardt, of Lausanne, has lately described a method for treating simple fractures, practiced by him with uniform success during the last twelve months. It consists in immobilizing the fragments by means of a sufficient quantity of cotton-wool with several thin, narrow and flexible splints, the whole being fixed by a flannel roller or handkerchiefs. The dressing is removed in two or three weeks, according to the severity of the injury. The chief advantages claimed for the plan are these: owing to its elasticity and compressive action, the dressing reduces effusion to a minimum, while leaving the circulation quite free. Hence the fragments, not being bathed in serosanguinolent effusion, unite much more rapidly than under ordinary dressings. Moreover, while fixing the fracture as effectually as an absolutely immovable apparatus, the dressing never causes any cutaneous lesions, and allows easy inspection of the injured limb.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, June 25, 1890.

DR. EDWARD JACKSON read a paper on

THE RECOGNITION OF EYE-STRAIN BY THE
GENERAL PRACTITIONER.

The attempt to give relief from the symptoms of eye-strain by a careful trial, seriatim, of one's favorite sedative, tonic, and alterative prescriptions, followed by experimentation with the formulæ of great professors found floating on the surface of medical journalism, does not usually bring much comfort to the patient or credit to the doctor. And that it is so frequently persisted in until the patient deserts his so-called medical adviser, and of his own notion takes his chances with the specialist or the charlatan, seems to argue an inability to recognize the connection of this group of symptoms with their cause. The worst evil of specialism is ignorance and indifference as to other departments of medicine; one of the most aggravated manifestations of this evil is the expressed indifference of so-called "general practitioners" toward the anomalies and diseases of the eye.

From time to time efforts have been made by ophthalmologists to secure a more general recognition of eye-strain on the part of the mass of the profession; but usually these efforts consisted in a recommendation of some special instrument or procedure of diagnosis, as the refraction ophthalmoscope, or the shadow-test, or a set of trial lenses, reduced in size and price to the supposed needs of the mass of the profession. If it were really necessary to apply such special means of diagnosis in order to recognize the presence of eye-strain, there would be little prospect of its early general recognition. But it is frequently recognized by the patient himself, and the ophthalmic surgeon finds in the general rational symptoms quite sufficient grounds for a provisional diagnosis; and if the mind is clear from preconceived hypotheses as to the causes of the symptoms, tending to divert attention from their real origin, there is no reason why any one respectably qualified for general practice of medicine should not be able to make a provisional diagnosis with sufficient certainty to serve for the basis of further investigation and treatment, in the great majority of cases, without resort to any special method of examination whatever. Of course, the ophthalmoscopic evidence of ametropia, when it can be obtained, is very valuable as confirming such a diagnosis; and I do not underestimate the value of the ophthalmoscope to the general practitioner, for I cannot regard any one who is unable to use the ophthalmoscope as properly qualified for general practice. But I do say

that inability to measure refraction with the ophthalmoscope is no reason for failing to recognize eye-strain.

The patient suffering from eye-strain comes with a certain history and certain complaints, which, carefully considered by the light of a very moderate knowledge of the subject, clearly indicate the cause of the trouble, in the great majority of cases. The symptoms in question may be considered separately.

Impairment of vision, either quite temporary, more prolonged, or quite permanent. A very characteristic form of temporary impairment of vision is that due to sudden relaxation of the accommodation. This occurs when the ciliary muscle has long been overtaxed, and especially in the latter hours of the day, when it is nearly tired out. The patient notices that the print or other near object on which the attention is fixed suddenly becomes entirely blurred, compelling the cessation of the eye-work. After a moment, however, the power of again focussing the object returns, and work can be resumed. The patient is apt to close his eyes for an instant, and, perhaps, rub them, and on again opening finds the sight again restored. If the eye-work is continued, the failure of accommodation recurs, to again rapidly pass away; and keeping on with the eye-work, these periods of inability to see become more and more frequent, until, finally, they greatly interfere with the continuance of the work, or quite prevent it. This form of impairment affects only the vision for near work.

Another temporary impairment is that due to spasm of the accommodation; it affects distant vision only, and is noticed chiefly by those whose distant vision is otherwise pretty good. It comes on after prolonged straining of the eye, usually for near vision, and lasts until the eye has gotten well rested. It is a valuable danger signal, and should secure cessation from the work causing it until it has given place to normal relaxation. Permanent impairment of vision is brought about when eye-strain causes myopia or decided permanent damage of the choroid and retina.

Headache and aching of the eyes—Eye-strain should be the first thought suggested by any complaint of headache, for in our day and civilization it is by far the most common cause of that symptom. It enters as a factor into the causation of nearly all headaches not due to pyrexia, toxemia, or diseases of the brain or its membranes. The simple existence of headache, therefore, should suggest eye-strain; but frequently a careful inquiry as to the manner and time of occurrence of the attack, and the location of the severest pain, will be almost conclusive as to the origin of the trouble.

Often it comes on whenever the eyes are used, and is absent when they have had a proper period of rest. The occasions of most severe re-

quirement in the direction of eye-work are the doing of anything requiring accurate near vision, taxing both the accommodation and the convergence; or traveling, shopping, attendance at public gatherings, which entail more use of the eyes than the patient is at the time conscious of, and often under unfavorable conditions.

Very often the chronological connection between the use of the eye and the occurrence of the ache, although perfectly certain and evident when once it has been observed, has never been noted by the patient until his attention has been directly called to it. Even when the headache seems constant and quite uninfluenced by variations in the amount of eye-work, it may be due wholly to eye-strain.

In hyperopia in young people the accommodation is in excessive use so long as the eyes are open and the attention fixed on any visible object; and hyperopia is the most common cause of constant headache. The writer was formerly subject to a constant headache whenever confined to the house, and regarded it as caused by breathing vitiated air, until it was quite cured by the correction of his hyperopic astigmatism. Many persons have the same idea as to the causation of the headaches they always experience when attending the theatre or other place of public amusement, and which are really due to eye-strain. Others ascribe these headaches, and those experienced in traveling or shopping, to exhaustion. This is nearer the truth, only they commonly have in mind a condition of general exhaustion, whereas it is largely one of local exhaustion of the special nervous apparatus concerned in the act of seeing.

The *location of the aching* is of some significance. Generally it is frontal, often described as beginning in the eye, or just back of the eye, or through the temples. Frequently it extends to the occipital region, and may sometimes be felt principally or wholly in that region. Headache most severe in the vertex or confined to that region is probably not very common from any cause, but from eye-strain it is almost unknown. Often the headache is more severe on one side of the head than the other. Sometimes it is entirely confined to one side, but usually it is bilateral.

Those more or less regularly periodical headaches, known as nervous or sick headache, migraine, or, when confined to one side of the head, hemicrania, are in many cases set up by eye-strain and relieved by its removal. Attacks of this kind are frequently ushered in by certain interference with vision and subjective sensations of light, affecting a part or the whole of the visual field, and known as ophthalmic migraine. These visual disturbances are simply a part of the general "nerve-storm," and it is not certain that they especially indicate the origin of the attacks to have been eye-strain.

Congestion, irritability, or inflammation of the eyes and their appendages should always suggest the suspicion of eye-strain. A single attack or manifestation of this kind has no especial significance, but repeated attacks of inflammation, or prolonged congestion or irritability, are exceedingly suggestive of a continuing cause; and the most common of these is the one now under discussion. No case of chronic inflammation of the margins of the lids, or of recurring conjunctivitis, or repeated styes, has justice done to it until it has been carefully investigated for eye-strain. Persons at the period when they begin to feel the effects of loss of accommodation in presbyopia or absolute hyperopia, suffer from repeated attacks of conjunctivitis, which they commonly ascribe to "taking cold in the eye," but which are cut short by use of the appropriate lenses, and which, if unchecked, would tend to establish a chronic catarrhal condition which is a chief discomfort in the lives of many elderly people.

Of course, these conditions of ocular congestion and inflammation will be recognized by the usual symptoms of redness, swelling, and itching, smarting, or burning pain. They often require especial local treatment, and will quite often be temporarily cured by this alone; but if the underlying cause is not removed, they show a strong tendency to recur indefinitely, or until the accommodation is so far lost that the temptation to strain it is removed. It should be noted that usually headache and these local inflammatory conditions are not presented by the same case. They may coexist, but, more commonly, if one is decidedly present, the other is absent.

So far nothing has been mentioned for the diagnosis of eye-strain but the facts ascertained by questioning the patient, and from simple inspection of the eye. If, now, the physician's office contains—what every general practitioner's office should contain—a card of test-letters for accurately ascertaining the distant vision, and a card of fine print for ascertaining the near point of the eye, additional valuable evidence is easily obtainable. The trial of the distant vision will give indication of any considerable degree of myopia or astigmatism. But it must always be borne in mind that troublesome ametropia may be present without preventing perfect distant vision. The position of the near point, if farther from the patient's eye than his age would indicate, is pretty good evidence of strain of the accommodation. Evidence of strain of the external muscles of the eye, heterophoria, can be obtained by simply getting the patient to keep his eyes fixed on some object, near or distant, and covering one eye; then noting whether the covered eye deviates from its position of fixation, and especially whether it makes a quick movement to return to that position when it is uncovered.

Briefly to recapitulate, the common symptoms

of eye-strain are: Certain forms of impairment of vision.

Headache, which is to be studied with reference to the times of its occurrence and the parts of the head to which the aching is referred, with careful discrimination between the patient's facts and his theoretical explanation of them.

Chronic or repeatedly recurring congestion, or inflammation of the eye or its appendages.

And if to these symptoms are added the results of the simple tests of near and distant vision, and evidence of tendency of the eyes to deviate from their normal position when covered, a very good basis is furnished for the probable or provisional diagnosis of eye-strain, without recourse to any special apparatus or unusual diagnostic procedure. And in view of these facts there is no justification for the general practitioner who fails to recognize most of the numerous cases of eye-strain with which he is brought in contact.

DR. GEORGE M. GOULD: Certainly, nothing Dr. Jackson has advanced in his excellent paper calls forth controversy or criticism; but I think a word may be added as to certain other symptoms not alluded to by him, that may sometimes put the general practitioner on the track of an eye-strain reflex. When eye-strain is sufficiently severe to set up a reflex neurosis, sleepiness is a common symptom, brought on by persistent reading or writing. The patient cannot understand why he grows so drowsy. A more important trouble is one I at first advanced somewhat doubtfully, but now I am growing perfectly convinced is a genuine result of ametropia. I allude to troubles of appetite and digestion. Few patients with severe or long continued eye-strain that do not complain of anorexia, fickle appetite, or some dyspeptic trouble. Mothers frequently call such girls "pickers." Explain the mechanism of this reflex as we may, I am sure it is a fact, and that a malnutrition often results that may end in anæmia, and many different forms of nervous abnormality. I have had a large number of such patients regain long-lost appetite after putting on glasses, and regain ten to twenty pounds of flesh within a month or two. Nervousness and choreic movements, even genuine choreas, are traceable sometimes to the same causes. I had one patient who wore the right shoe out in a few weeks, and who had a habit of bursting out crying or into a rage at a trifle. She had been treated for chorea for years at one of our best hospitals. All symptoms have disappeared for two years, upon correction of her hyperopic astigmatism. I could cite several other cases.

I should like, also, to call attention to car-sickness in connection with eye-strain. I have had eight or nine cases of this kind, and by glasses all have been relieved of their car-sickness. One was that of a gentleman who every journey had car-sickness. While he had the mydriatic in

his eyes he went to Washington, and suffered no inconvenience whatever. Subsequently, after he had glasses, he made a trip to St. Paul without any of the former trouble. In the last two days I have had two cases—one that of a girl who could not ride a short distance in the street cars without vomiting. I found a decided degree of hypermetropic astigmatism. With the mydriatic in her eyes she rode home without her usual trouble.

A strange thing with reference to eye-strain is, that it often exists to an exceptional degree without showing any symptoms in the eye. The patient will often say that the eyes are perfectly good, and have never caused any irritation. The reflexes seem to settle in some other place. This is an interesting pathological and physiological question.

With reference to testing the eyes by the general practitioner, it has struck me that a simple plan, which could be readily carried out, would be as follows: Have two test-cards, so that the patient will not learn and remember the letters. Let him first test distant vision with one of the test-cards; then let him instil homatropine. This will give perfect paralysis in three-quarters of an hour. Then retest with the other card. Then, if vision has decreased, there is eye-strain, due to astigmatism or hypermetropia. Another practical point is that, if the patient is suffering with headache, he will be relieved by the application of the mydriatic. It is as to the existence of hyperopia and astigmatism that we want to know. Myopia rarely produces eye-strain.

DR. MARY E. ALLEN: I would ask if, in these cases, the condition of the recti muscles has not something to do with the symptoms? In my own case, I suffered eye-strain for a long time, and insufficiency of the recti muscles. I had one symptom which I have never seen described, and that is, a feeling as though a blow had been struck against the eye. My explanation of this is that, by a spasmodic contraction of the straight muscles, the elastic eyeball is suddenly drawn with force against the back of the orbit, giving the sensation of a blow. I had this a long time before wearing glasses, but very seldom since.

DR. JACKSON: My paper simply refers to the *recognition* of eye-strain. I purposely considered only those symptoms most generally present, and had in mind the great mass of cases, not the exceptional ones, which do, in the aggregate, constitute a very large number, but still are proportionately few. The other symptoms which have been mentioned, and many others, might be referred to as due to eye-strain, but they do not occur in the large number of cases, and can hardly be regarded as of general importance in making the probable diagnosis.

I have used the term eye-strain, not as a synonym of ametropia, because we may have ametropia without eye-strain, or eye-strain without ame-

tropia, if requirements are put upon the eye too great for its capacity. You can have it without any ametropia, or weakness of any extra-ocular muscle or group of muscles. It is to the question of eye-strain as isolated and separated from ametropia that I refer. Of course, in a very large proportion of cases, the relief of the eye-strain comes from correction of the ametropia.

In connection with that correction, I should like to say one thing with reference to a remark made by Dr. Gould—that is, if myopia were present, it need not be considered. In my experience, myopia may cause severe eye-strain. There is the strain of convergence, and any inequality between the two eyes in the amount of myopia—and myopia is usually unequal—is very likely to cause eye-strain. The discovery of myopia would not, to my mind, rule out the existence of eye-strain.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, March 21, 1890.

V. P. GIBNEY, M.D., CHAIRMAN.

DR. JOHN RIDLON presented a case for diagnosis.

DR. GIBNEY considered it a case of cervical rotary scoliosis, with a cyst over the scapula. He had seen one or two cases of cystic tumor in this region; and the diagnosis of scoliosis was made by the position of the right shoulder, the drawing of the head to that side, and on the patient's bending forward, a deviation of the spine to the right.

DR. SAMUEL KETCH agreed in the diagnosis of rotary lateral curvature, which he thought was congenital.

DR. L. PUTZEL found some enlargement of the spine of the scapula, and muscular spasm of all the muscles inserted into the inner border of the scapula.

DR. A. B. JUDSON thought there was evident scoliosis.

DR. W. R. BIRDSALL was of the opinion that most of the deformity was the result of muscular spasm. An electrical examination ought to settle the question.

DR. A. M. PHELPS said that in a growing child, such a condition of scoliosis was often secondary to muscular spasm.

DR. RIDLON said that he had been unable to obtain any history which would account for an irritative lesion at birth; and he had only just learned that the child had been etherized by Dr. Gerster two days ago, and that the swelling had entirely disappeared.

DR. T. HALSTED MYERS presented a case of DOUBLE CONGENITAL MALFORMATION AT THE KNEE, WITH HYPEREXTENSION, AND TALIPES.

The patient was born at term, after an easy

labor, by a breech presentation. The feet had been closely applied to the head, and the quantity of liquor amnii had been normal. The marked flexion of the thighs had been gradually overcome at the end of eight months; but at the age of 16 months, the thighs could not be extended beyond the straight position; both legs were hyperextended to 140° ; there was equino-varus, marked on the left side, and moderate on the right. Neither patella could be felt. The inter-condylar grooves were shallow; the tibiæ glided forward into partial dislocation, and there was marked genu-valgum, with abnormal lateral mobility at the knee. The body was otherwise normal; and there were no evidences of cerebral defect. The muscles responded well to the Faradic current, but in a less degree on the right side. The flexors of the thigh were in constant active contraction, and the condition of the posterior leg muscles seemed to be one of structural change. The deformity had been considerably reduced in two weeks by means of a brace, which maintained flexion of the knee.

DR. MYERS presented brief notes of several cases which had been already reported by some of the members of the Section. The absence of cerebral symptoms in these cases, pointed to the cord as the seat of the lesion. The muscular spasm seemed to disappear about the third year, or even earlier; and the prognosis, as regards the usefulness of the limbs, was very good. There was nothing in these histories, however, to show that the foetus had maintained the position found at birth. This position approximated the insertions of the anterior thigh group and the posterior leg group, which might very easily account for the structural changes in the muscles, and consequent shortening and deformity. Nor was it surprising that the patella, which was practically a part of the quadriceps tendon, should share in this mal-development; but the character of the labor itself ought to have but little influence, as the cartilage of the patella appeared in the third month of foetal life.

DR. R. H. SAYRE related the history of a similar case, and exhibited photographs showing the condition immediately after birth, and again six months later. The labor and the quantity of liquor amnii had been normal, and no cause could be assigned for the condition. At the present time, the leg could be flexed on the thigh to about 45° , and extension was possible only to a straight line. The shortening was $\frac{3}{4}$ of an inch. No patella had yet been found.

DR. KETCH said that in a collection of fifty-six cases of congenital dislocation, reported by Dr. Hubbard and himself, there was only one congenital dislocation of the knee, and this was unilateral. The literature of the subject was still very meagre, Noble Smith being the only author he had found, who spoke of the condition at length.

The treatment which this author advocated, had yielded uniformly good results.

DR. LE ROY W. HUBBARD, by invitation, presented the report of

A CASE OF POTT'S PARAPLEGIA.

The case was treated by suspension, after the method suggested by Motchoukowski. It was one of those untractable ones that had resisted ordinary methods of treatment. Drs. Ketch and Hubbard employed daily suspension for a few minutes, and a decided daily improvement was noticed within a month, but a complete cure had not been established up to the time of the report.

DR. PUTZEL said that his pathological studies had led him to believe that the majority of cases of Pott's paraplegia were not due to pressure, but to a transverse myelitis; and his experience with the treatment by suspension had taught him to consider it a method which was, at best, only a temporary relief. Very rapid improvement often followed many methods of treatment. Large doses of iodide of potassium had not yielded him very satisfactory results. It was important to remember that the disease showed a strong tendency to spontaneous recovery.

DR. BIRDSALL thought that where Pott's paraplegia was due to myelitis, the disease was fatal; but many cases were due, not to a myelitis, but to irritation and pressure on the anterior or posterior roots of the nerves in their passage through the foramina. Among the various theories which had been advanced concerning the action of suspension, he thought that the most plausible one attributed the beneficial action to a slight separation of the vertebræ, with consequent improvement in the circulation of the affected parts, particularly the nerve roots. This was what might be expected from our knowledge of nerve-stretching; and on this account, he thought the method somewhat dangerous. For many months after Charcot called attention to the method, the literature of the subject was very extensive, but more recently, it had become quite scanty. It was particularly strange that these early investigators had not furnished any later reports.

DR. L. C. GRAY said that, excluding those cases which were complicated by organic lesions of the cord, he thought that the etiology of Pott's paraplegia could be explained by reflex causes. Nerve-stretching in this disease was a very different thing from what it was in locomotor ataxia. The latter disease had a very complicated pathology, and embraced several distinct varieties. It was a very significant fact, that the results claimed by Charcot had not been obtained by other observers. He did not think that the treatment by suspension, when properly managed, was dangerous; and where the paraplegia was of reflex origin, he would look for temporary relief, and in milder cases, even a cure was not impossible.

DR. W. R. TOWNSEND reported two cases which he had treated by extension in bed, according to the method recommended by Wm. J. Fleming in *The Lancet* for 1889. He had modified the arrangement for extension, by using a jacket around the pelvis, with straps passing down on each side. Both cases had received large doses of iodide of potassium in addition to extension; and both showed the improvement noted in Dr. Hubbard's case.

DR. RIDLON stated that he had made use of large doses of iodide of potassium, the actual cautery, and of horizontal traction while in bed; but he had been unable to see any favorable modification of the disease by any of these methods. He now kept his patients on their backs, and waited for them to get well. One case recovered perfectly after three years.

DR. KETCH said that he had suggested the use of suspension in the case reported by Dr. Hubbard, after the paralysis had lasted for about three years, and had not been improved by recumbency, or the use of iodide of potassium.

DR. R. H. SAYRE said that the treatment of Pott's paraplegia by suspension had been practiced as long ago as 1828, by J. K. Mitchell, of Philadelphia. Suspension failed to give relief when carried to excess, and it was dangerous if injudiciously applied. These cases should not be left untreated, for their chances of becoming permanently paralyzed were thereby increased. Constant traction by means of the "jury mast," and traction with recumbency, were both very useful methods. By making use of extension with the patient in the "wire cuirass," his father had been able to employ traction with recumbency without depriving the patient of the benefits of fresh air.

DR. PHELPS considered that the employment of suspension at a period when the disease was still active, was bad practice; and the great majority of cases recovered, if the spinal column were only fixed.

DR. HUBBARD did not think that pressure on the nerve roots could be of common occurrence; for sensory symptoms rarely appeared, and then only in the later stages.

DR. A. B. JUDSON read a paper entitled

A CRITICISM OF WILLETT'S OPERATION FOR TALIPES CALCANEUS.

He stated that in this affection, the deformity was of less importance than the disability, which prevented the patient from resting on the toe in walking—a disability which Mr. Willett sought to remove by shortening the tendo Achillis. The writer demonstrated that the tension on the heel-cord greatly exceeded the weight of the body; and expressed the opinion that the tendon, shortened by operation, would not long endure the strain without yielding. He advocated the mechanical

treatment of this disability, and presented a brace, which was easy to apply, convenient to wear, and inexpensive.

DR. W. E. WIRT, by invitation, gave a mathematical demonstration, showing that Dr. Judson, in his calculations, did not make any allowance for the action of the other muscles; and that when these were considered, it was found that the tension sustained by the tendo Achillis was at no time more than 1.4 times the weight of the body.

DR. ROYAL WHITMAN, by invitation, read a paper on the *Rational Treatment of Flat Foot*, and showed some plaster casts of cases he had treated.

DR. WILLY MEYER presented *Two Cases of Flat Foot*, which he had treated by supramalleolar osteotomy, and showed photographs and casts illustrating the condition of the patients, before and after the operation. He considered the method a most rational one; for it required the patient to step upon the outer border of the foot, so that the weight of the body was transmitted through the cuboid, instead of through the scaphoid bone. Dr. Whitman's results were excellent; but they had been obtained in comparatively young subjects, after six months of treatment. The method which he advocated, would secure permanently good results in as many weeks.

DR. R. H. SAYRE remarked that Mr. Golding-Bird, who was the first to do these operations, found less frequent occasion than formerly to resort to this method, as he was able by non-operative measures to relieve pain and, in great measure, to remove the disability.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Report concerning the Cases of Poisoning in India—An Interesting Case of Suppurating Dermoid of the Right Ovary—Diuretin—Miscellaneous.

Dr. T. D. Collis Barry has furnished an interesting report concerning the cases of poisoning in India, of which it is to be regretted there are many. In fact, one of the railway companies in India recently published a notice warning unsuspecting travelers against wretches who go about robbing those to whom they have administered some narcotic. Dr. Barry, however, has dealt with the more serious aspect of poisoning; that is to say, cases in which it is suspected poison has been administered with a view to murder. Of these there were 170 last year, as compared with 182 the year before, and 159 in 1887. Poison was discovered in sixty-six cases, a smaller percentage than usual, of which thirty-three were arsenic, twenty opium, five powdered glass, three datura, three mercury, and two nux vomica. Some curi-

ous cases which were inquired into are mentioned, amongst others a blacksmith at Salara, attached to the Ninth Regiment, stated that some poison (corrosive sublimate) had been mixed with his food by his assistant, the assistant wishing to remove his senior with a view to promotion. After careful inquiry, it was proved that the poison had been added to the food by the blacksmith himself, with a view to accusing the assistant. Pounded glass has been for some years tried, but it appears to have met with little success, as its coarseness and grittiness have betrayed its presence to the intended victim. Only one case is recorded in which powdered glass was successful in taking life, and death occurred in forty-eight hours. Dr. Barry says that arsenic has always been the poisoner's favorite material, opium enjoying the next place, the figures being last year 50 per cent. and 31 per cent. respectively, and this has been the average during the past ten years. A very favorite way of administering arsenic is in the form of sweetmeats. In one case a sweetmeat was analyzed weighing 860 grs., and from it was obtained no less than 610 grs. of arsenic. This interesting trifle was given to a police Sepoy by a man with whose wife the Sepoy had run away. A singular case is on record of five patients in a leper hospital who were found to be suffering from the effects of poison, and on investigation it was discovered that some tamarinds they had eaten contained 12 grs. of arsenic to the lb., while some sweetmeats they had also consumed showed the presence of the poison to the extent of 12 grs. to the oz. The would-be murderer, in this instance, was a leper who wished to dispose of another leper in order that he might marry the latter's wife, and as he was unable to get the man by himself, he coolly decided to poison the lot.

Dr. William Duncan has had under his care, at the Middlesex Hospital, an interesting case of suppurating dermoid of the right ovary, which had opened into the bladder. It was diagnosed as being a suppurating pelvic cellulitis, and Dr. Duncan cut down upon the abdominal swelling, with a view of making a large counter-opening into the abscess. This is his invariable custom when a pelvic abscess has opened into the bladder, as otherwise, owing to imperfect drainage, the case drags on indefinitely, and cystitis aggravates the sufferer's condition; whereas, when a free exit is made for the pus elsewhere, the vesical opening soon closes. In this case, instead of opening the sac of an abscess, Dr. Duncan cut into the peritoneal cavity, and found that the case was one of dermoid tumor of the right ovary. Upon passing the hand into the pelvic cavity, the growth proved to be so densely adherent to the uterus, bladder, and pelvic walls, that he decided it would be unjustifiable to attempt its removal, so the tumor was stitched to the edges of the incision in the abdominal wall, and ten days later

an opening was made into it. The patient quickly put on flesh, and soon only slight traces of pus were to be found in the urine. Later, some bagging of pus taking place in the most dependant part of the sac, the patient was placed under an anæsthetic, with a view of making a counter-opening into the vagina. The sound, however, in the bladder passed over to the right side of the pelvis, making it appear that it would be necessary to cut through this viscus in getting to the abscess. The attempt was consequently given up. The woman rapidly becoming worse through the pyrexia and rigors, it was determined, at all costs, to get an opening into the vagina. This was fortunately effected without wounding the bladder, and from that date the patient made an uninterrupted and rapid recovery. The case showed the important fact that an ovarian tumor may disappear if free drainage be made through it.

Diuretin is the name of a new preparation which has lately been introduced into clinical practice. Caffeine, both *per se* and in saline combination, has for some time past achieved a certain reputation as a diuretic, but nevertheless its action is not always a very reliable one. Theobromine, on the other hand, besides being until recently far more costly than caffeine, is practically almost insoluble in water, although it acts more powerfully upon the kidneys than the former alkaloid. Diuretin purports to be a species of double salt; in fact, a salicylate of theobromine and sodium, and is so readily soluble that it dissolves in half its own weight of water, and retains this large proportion even after cooling. The adult dose recommended is about 15 grs., but this quantity may be repeated five or six times in the course of the twenty-four hours.

It is stated that a medical man claims to have discovered a method of rendering tobacco harmless to the mouth, heart and nerves without detriment to its aroma. A piece of cotton wool, steeped in a solution of 5 to 10 per cent. of pyrogallie acid, inserted in the pipe or cigar holder, will neutralize any possible ill effects of nicotine. In this way not only may the generally admitted evils of smoking be prevented, but cirrhosis of the liver, headache, and furring of the tongue may be avoided. Citric acid, which was recommended by Vigier for the same purpose, has the serious disadvantage of spoiling the taste of the tobacco.

On July 4, an interesting ceremony took place at Marlborough House, when the Princess of Wales presented certificates of membership of the National Pension Fund for Nurses to representatives of the first thousand who joined the fund. The number of nurses present was about 700, and they were arranged in companies under the trees in the gardens behind Marlborough House. All the principal London, and many of the Provincial hospitals were represented, while here and there

were to be seen the special uniforms worn on foreign service. The royal party appeared on the steps leading from the conservatory shortly before 1 P.M., and as each nurse passed the steps she received her certificate from the hands of the Princess. Each certificate had been signed by the Princess of Wales, and stated that it was presented in testimony of the fact that the recipient was one of the first thousand nurses who joined the fund, and thus became one of the founders who secured £25,000 as the nucleus of a permanent fund for the benefit of the nurses of the British Empire. G. O. M.

NEW INSTRUMENTS.

A NEW DILATOR FOR THE TREATMENT OF OBSTRUCTIVE DYSMENORRHOEA.

Read in the Obstetric Section of the Tenth International Congress, at Berlin, August, 1890.

BY THOMAS MORE MADDEN, M.D., F.R.C.S.ED.

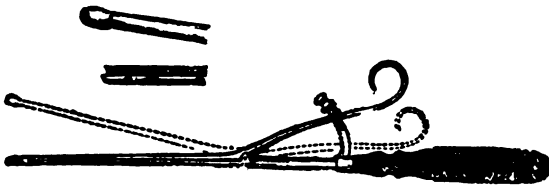
Physician to the Hospital for Sick Children, Dublin; Obstetric Physician and Gynecologist Mater Misericordiae Hospital; Examiner Conjoint Board Royal College of Surgeons and Apothecaries' Hall, Ireland; Consultant National Lying-in Hospital; ex-President Obstetric Sections of the Royal Academy of Medicine, Ireland, and of the British Medical Association; formerly Vice-President British Gynecological Society; M.D. *Honoris Causa* Texas Medical College, Etc.

The following is an abstract:

In the recognition of obstruction from cervical stenosis as the chief cause of dysmenorrhœa, will be found the key to the pathology and successful treatment of this condition in the great majority of cases. Thus in my hospital practice during the past 20 years, nearly 11 per cent. of sterility similarly caused have come under observation in a total of nine thousand gynecological cases. Of all the ailments of female existence, few give rise to more persistent suffering, or produce more disastrous effects on the general health, and even on the cerebro-nervous system, or on the moral constitution of the patient, than does well-marked obstructive dysmenorrhœa. The latter consequence is more especially evident, in many cases of alcoholism, which in women may very frequently be dated from their first painful menstrual period, for the relief of which stimulants are too often improperly administered and repeated in increasing doses, until finally, in many cases, the victim of dysmenorrhœal alcoholism becomes a habitual, and, perhaps, an incurable drunkard.

It is not my purpose here to refer to the successive improvements which have since been effected in the methods of carrying out the gradual dilatation of the cervical canal, since the introduction into practice by Simpson and Sloan of sponge tents or laminaria bougies for this purpose. No greater improvement has occurred in

our branch of surgery than the replacement of these oftentimes unsatisfactory, possibly hazardous, or even fatal, and always painful procedures by the more effective means now at our disposal for the rapid expansion of this canal. Of these, perhaps the best known and most generally employed are either Hegar's, Duke's, or Lawson Tait's dilators. I now desire to call attention to another instrument which I have designed for the same purpose, and which, I venture to hope, may be found to supply a want still recognized by the gynecologists—namely, that of a reliable and effective means of securing the rapid and permanent dilatation of the cervical canal in the treatment of stenosis giving rise to the morbid conditions now under consideration. This instrument differs from other dilators in several respects, and, above all, in one which I consider



most important—viz.: in producing expansion of the canal from within outwards—in other words, in imitating the natural process of expansion from the uterine cavity downwards to the os uteri; whereas most other dilators, such as Hegar's, etc., act in the opposite direction. In my own hands the utility of this instrument, the expansion effected by which may be measured by the affixed index, has been fully tested in a very large number of cases of sterility and dysmenorrhoea in hospital and private practice. I may add that my dilator, which does not occupy more room than the ordinary sound when introduced, may also be used with advantage for the dilatation of the female urethra in many cases in which this procedure is indicated. This instrument has been carefully made in accordance with my directions by Messrs. Arnold & Sons, West Smithfield, London.

MISCELLANY.

ANTIVIVISECTION BITTERNESS.—The Society for the Protection of Animals from Vivisection recently held its annual Spring conference in London. The war-cry this year was "Pasteurism and Crime," and Canon Wilberforce is reported to have rejoiced in the fact that the movement to found a Pasteur Institute in England had been defeated by the society's method of placarding the city with large posters, containing the list of those who had died after treatment by the Pasteurian system. Many others indulged in bitter denunciation of both vivisection and Pasteurism, as being the means of brutalizing the otherwise honorable and useful profession of medicine.

LETTERS RECEIVED.

Dr. J. M. Batten, Pittsburgh, Pa.; Dr. G. O. Mead, Newmarket, Eng.; Dr. C. W. Hitchcock, Detroit, Mich.; W. T. Keener, Dr. J. C. Hoag, Chicago; Copeland Townsend, W. H. Schieffelin & Co., Dr. S. T. McDermith, Thos. Leeming & Co., I. Haldenstein, Dr. R. B. James, F. M. Lupton, J. H. Bates, Dr. J. A. Cutter, Dr. S. T. Armstrong, Dr. W. R. Townsend, E. Steiger & Co., New York; The Upjohn Pill & Granule Co., Kalamazoo, Mich.; Battle & Co., Provident Chemical Works, St. Louis, Mo.; John Parmenter, Buffalo, N. Y.; Dr. W. H. Davies, Maquoketa, Ia.; Dr. L. G. North, Tecumseh, Mich.; Dr. E. Chenery, Dr. F. S. Parsons, Arena Pub. Co., National Typewriter Co., Boston, Mass.; Dr. S. C. Newlin, New Salem, Ind.; Dr. L. B. Grandy, Oxford, N. C.; Dr. D. B. Collins, Madison, Wis.; Dr. E. L. Jones, Florence, Ala.; Cincinnati Sanitarium, College Hill, O.; Dr. M. M. Lively, Hardyville, Ky.; Dr. H. M. Mixer, New Hampton, Ia.; Dr. F. Humbert, Alton, Ill.; Dr. H. H. Witherstine, Rochester, Minn.; Dr. W. Wyman, Washington, Dr. H. Judd, Galesburg, Ill.; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. J. G. Carpenter, Stanford, Ky.; Dr. T. B. Greenley, West Point, Ky.; Allen & Yates, Buffalo, N. Y.; Sharp & Dohme, Baltimore, Md.; Dr. A. H. Hay, Racine, Wis.; Dr. D. Barrow, Lexington, Ky.; I. D. Holden, Stockton, Cal.; Dr. T. Legaré, Charleston, S. C.; P. Blakiston, Son & Co., Philadelphia; Dr. H. A. Clarke, Rockford, Ill.; Dr. E. S. Elder, Dr. L. H. Dunning, Indianapolis, Ind.; Dr. W. A. Dietrich, Lookout Mt., Tenn.; Dr. Millard G. Peck, Dr. J. A. Robison, Chicago; Dr. H. B. Baker, Lansing, Mich.; Dr. E. A. Curry, Danville, Pa.; Dr. A. B. Patterson, Atlanta, Ga.; Dr. J. D. Scouler, Pontiac, Ill.; Dr. C. Montezuma, W. Shoshone, Nev.; Dr. N. E. Landon, Newark, N. Y.; Johnson & Johnson, New Brunswick, N. J.; Dr. A. L. Hummel, M. J. Lawson, Philadelphia; Hôpital Saint-Louis, Paris, France; Dr. J. L. McComas, Oakland, Md.; Dr. A. S. Kinnamann, West Salem, O.; Dr. J. H. Van Eman, Kansas City, Mo.; Dr. Toubour, Beatrice, Neb.; College of Physicians and Surgeons, Keokuk, Ia.; Dr. J. A. Crook, Jackson, Tenn.; Dr. J. H. Baxter, Washington; Dr. D. M. Wick, New Hartford, Ia.; Dr. J. A. Brobst, Macungie, Pa.; Dr. B. C. Anderson, Beardstown, Ill.; Dr. S. O. L. Potter, San Francisco, Cal.; Dr. J. S. Marshall, Cleveland, O.; Dr. W. C. Owen, Coquille City, Ore.; Dr. W. H. Myers, Longwood, Ill.; McIntosh Battery & Optical Co., Chicago; Dr. J. G. Hanks, Rays Hill, Pa.; Dr. R. S. Davis, Pittsburgh, Pa.; Dr. D. B. Collins, Madison, Wis.; Dr. J. B. Mattison, Brooklyn, N. Y.; Dr. H. C. Jones, Decatur, Ill.; Dr. G. R. Wells, Livingston, Mont.; Dr. T. D. Crothers, Hartford, Conn.; Dr. Q. C. Smith, Austin, Tex.; Dr. C. E. Denison, Philadelphia; Dr. J. W. Stickler, Spring Lake, N. J.; Dr. T. H. Huzza, Atlanta, Ga.; Dr. J. W. Shively, Washington; Dr. L. D. Mason, Greenwich, Conn.; Dr. W. M. Knapp, Asylum, Neb.; Dr. U. O. B. Wingate, Milwaukee, Wis.; Dr. D. R. Walker, Reeses Mills, Ind.; Dr. J. G. Meachem, Racine, Wis.; Dr. W. W. Hester, Chicago, Ill.; Dr. J. F. Blair, Linwood, O.; Dr. R. P. Crump, Nitta Yuma, Miss.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 9, 1890.

Medical Director P. S. Wales, ordered in charge of the Museum of Hygiene, Washington, D. C.
Surgeon George A. Bright, ordered to the U. S. S. "Constellation."
Surgeon B. S. Mackin, detached from the U. S. S. "Constellation," and to Naval Hospital, Philadelphia, for medical treatment.
Surgeon E. Z. Derr, ordered to the U. S. S. "Minnesota."
Surgeon J. R. Waggener, detached from the U. S. S. "Minnesota," and ordered to the U. S. S. "Kearsarge."
Surgeon A. M. Moore, detached from the U. S. S. "Kearsarge," and granted three months' sick leave."

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No. 8.

ORIGINAL ARTICLES.

LYMPHOID HYPERTROPHY IN THE PHARYNGEAL VAULT.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY JONATHAN WRIGHT, M.D.,
OF BROOKLYN, N. Y.

It is seventeen years since Meyer, of Copenhagen, first wrote his paper on adenoid growths in the naso-pharynx. Since then the importance of the subject has grown constantly more apparent in explaining not only a set of symptoms directly dependent upon their presence, but in the understanding of a series of sequelæ and of subsequent local changes. Since then also there has been such an abundance of papers more or less complete that there is little left to be said except in a discussion of details.

The subject is, however, of such importance that some points in regard to it bear repetition. One of these, which has not been dwelt on so much in this country as abroad, is the pathological anatomy and the ultimate change of the lymphoid tissue. There are few who have had the opportunity of examining the post mortem appearances of either the healthy or the diseased naso-pharynx. The mutilation necessary to expose the cavity is a barrier to such investigations in the great majority of cases.

The vault of the normal naso-pharynx in the infant is a comparatively smooth walled cavity. There are described and usually found four folds or slight elevations of mucous membrane running longitudinally or obliquely of varying length and size. They are known as the lateral and median folds of the pharyngeal or third tonsil. Between these folds are slight depressions which have been called the lateral and the median recesses. This median recess was described in 1842 by Mayer, of Bonn, as a bursa, but Ganghofner and Schwabach claim that the latter when it exists is a pathological formation, while Tornwaldt and some of his followers have adopted the view of the earlier anatomist.¹

This depression is most deeply marked where the vault joins the posterior wall, and by the pro-

jection of the heads of the Longus colli muscles is sometimes a quite deep recess. Such a one is shown in the colored plate taken from an article by Pöelchen, in a late number of Virchow's Archives, which I show you together with two specimens of the naso-pharynx of still-born children. I have lately seen a case in which the naso-pharynx presented much such a picture as that represented in the plate must have in life. The wet specimen has been hardening in alcohol and it is probable that the ridges and depressions have been largely smoothed out by the constricting action of the fluid. Nevertheless you can plainly see the median recess.

The mucous membrane in this locality is studied with the openings of tiny follicles leading to acinous glands. Hence Luschka has called this aggregation the pharyngeal tonsil. In childhood we have here a great richness of lymphatics. This lymphatic tissue is supported by trabeculæ of fibrous bands and is composed of a reticulum, as seen in thin sections, crowded with round lymph cells. This reticulum is however more apparent than real, being in fact the walls of lymph channels which when cut across in sections make a network. A fairly good understanding of this may be arrived at by cutting a thin cross section of a stalk of Indian corn. This naso-pharyngeal structure is almost exactly similar to that of the lymph glands, the lymph nodes in the intestines, and the collection of tissue between the faucial pillars known as the tonsils proper. The surface is covered with ciliated cylindrical epithelium and the structure of the rest of the mucous membrane differs in no way from that found in other parts of the body. Sir Andrew Clarke² stated twenty-five years ago that the secretion of the normal pharynx was capable of turning starch into sugar, and the statement has more lately been advanced that this lymphoid tissue instead of acting exclusively as absorbents pours lymph into the naso-pharynx, which mixes with the food as it is masticated and swallowed.

It is with this lymphoid tissue that we are concerned, for by its hypertrophy we have formed the so-called adenoid growths of the naso-pharynx. The word adenoid is a misleading term as

¹For the literature and a short résumé of the subject see The Medical News, Sept. 7, 1889.

we naturally think of adenomata and of true tumors. Woakes calls them "Lymphoid pappilomata," which seems to me much more appropriate. They are represented and described in the text books as stalactite-like bodies hanging down from the vault and sides of the naso-pharynx like berries.

For the gross appearance this perhaps would be a good enough description, if we had the space washed clean of mucous and the membrane spread out before our eyes. As a matter of fact they are matted together partly by inflammation and partly by mucous, so that if confined to the vault they appear in the rhinoscopic mirror as a tolerably compact mass, and when extending along the sides and on the posterior wall they narrow the cavity and give a rough, uneven appearance to the mucous membrane. Their surface is reddish gray, the gray predominating where the masses are larger, as in the vault, while the lateral walls have a red and inflamed appearance. They are friable and bleed freely. The feeling imparted to the finger has been likened not very accurately, and certainly not very elegantly, to that of a mass of angle worms.

Pathogenic bacteria, streptococci and staphylococci flourish in the perverted and abundant secretions of the parts, and stand ready with the proper preparation of the tissues from "colds," to set up otitis media, lacunar and suppurative tonsillitis.

Hardened in alcohol, sections of this mass, stained double present a very characteristic appearance. Near the surface it is almost exclusively made up of the fine reticulum with cells more densely crowded together in some places than in others.

In the rather thick section which I have here, four or five of these lymph nodes can be seen arranged near together close under the epithelium which is here, as it is normally, composed of cylindrical ciliated cells. As the sections are made nearer to the base of the growth the fibrous trabeculae become more abundant and in it here and there are numerous mucous glands and blood vessels. This appearance is to be seen in the larger sections. Numerous tiny loops of blood vessels dip down toward the apices of the mass, but none of any size are met with. Hence the hæmorrhage during operation though profuse at first is soon checked, the structure having but a small amount of fibrous tissue to hold the vessels open.

The lymphoid hypertrophy therefore of the pharyngeal tonsil is of the same nature as that of the faucial tonsils, the latter however having larger trabeculae and more fibrous tissue.

Like the tonsils and like the lymphoid tissues elsewhere, as in the intestines atrophy begins in

adult life, and as age advances we have less and less of it. When middle life is reached we have little or nothing left of previously enlarged pharyngeal and faucial tonsils but the fibrous tissue of the trabeculae. It is probable that even this diminishes in bulk.

If in these hypertrophies we had nothing enlarged but the lymphoid elements, this absorption as age advances would leave us practically a normal pharynx; but as a matter of fact the fibroid or cicatricial tissue is left behind and interferes with the function of the mucous membrane. The mucous glands instead of pouring out the normal fluid mucus, become clogged with a semi-fluid tenacious secretion which clings to the surface, forming thick crusts by the evaporation of its scanty watery part before it can flow down the sides of the pharynx and be absorbed. This tenacious secretion acts as a constant source of irritation to the parts rendered still more susceptible to inflammation by the cicatricial tissue.

I have seen some cases in which this fibroid tissue was so abundant that it seemed to have formed a sort of false roof to the naso-pharynx connected to the true vault by loose and scanty connective tissue threads. By firm pressure with a stiff probe or with a red hot platinum point or with the end of the finger perforations can be made in it. Many of the post nasal cysts are doubtless of this character, the cicatricial tissue shutting off spaces which including a few mucous glands become filled with a glairy viscid, or a serous fluid. Bands and knots of cicatricial tissue analogous to that in burns of the neck, though of course on a much smaller scale, can occasionally be seen stretching across, and dotted about on various places of the pharyngeal vault. This I believe to be the history and course of these hypertrophies if left to themselves. While in by far the larger number of cases these growths undergo the absorptive changes mentioned between the ages of fifteen and twenty-five, they are occasionally met with after that age.

Chatellier³ refers to a case in which he operated at forty-nine years of age. Delavan⁴ asserts that lymphoid hypertrophy may begin in adult life. This I doubt very much indeed. It is probable that these are cases in which the tissue has previously existed without noticeable discomfort until some coryza or acute infectious disorder has set up the train of well known symptoms. Dr. J. Solis-Cohen⁵ reports having seen an enlarged pharyngeal tonsil in a woman of seventy, which had never given rise to any symptoms. While I have frequently operated on pharyngeal "adenoids," between the ages of twenty and thirty, I have no recollection of ever having seen a case in which there was much lymphoid hypertrophy in the vault after this age.

³ *Maladies du pharynx nasal, des tumeurs adénoïdes*, 1890.

⁴ *N. Y. Medical Journal*, Oct. 12, 1887, p. 393.

⁵ *Journal of Laryngology and Rhinology*, Feb. 1889, p. 3

² *London Hospital Reports*, 1864, quoted by Woakes.

It has been stated that these cases are occasionally congenital, and I have observed the growths in an infant a few months old.

They most frequently give rise to symptoms, between the ages of five and ten years. After that age the naso-pharynx begins to enlarge and grow away from the obstructing mass, on all sides, which of itself grows smaller.

As for the frequency of their occurrence, Meyer, out of 2,000 children, found them about one per cent. in Copenhagen. Here in New York, out of 2,000 children, Chappel⁶ found sixty who suffered from adenoid growths, or 3 per cent. These figures were taken from various public institutions, and doubtless the proportion is not so great when we include the better classes.

It has been stated and many times repeated by the best observers, that these growths are the frequent cause of high arched palates, narrow jaws and crooked nasal septa. While they may have some slight influence in modifying the growth and development of the maxillary bones, I believe that in this respect they have mistaken the cause for the effect. Heredity is claimed by many as a predisposing cause. If we inherit naso-pharyngeal tumors, or hypertrophies from our progenitors, it is an anomaly and contrary to all conceptions of modern biological laws. We may inherit cells which are predisposed to proliferate, or cells which are of low degree of vitality, but we do not inherit tumors.

We know that there is an inherited tendency for the physiognomy of the child to resemble that of the parent in a general way. This means that the dimensions and shape of the bones of the skull tend to assume the ancestral type. We often see a peculiarly bent little finger running through several members of the family. We know that the negro race has broad cheek bones and low palates, and usually straight nasal septa, in contra-distinction to the prognathous type so frequent in the descendants of the old Iberians.

It is however, an undeniable fact, that lymphoid hypertrophy of the pharyngeal vault, is very much more common in the latter class. To my mind the explanation is tolerably clear. It is easier to get dust out of an obtuse angled corner, than out of an acute angled one, and applied to the pharyngeal vault (which is of course always narrow where the palate arch is) secretions are more apt to lodge in the narrow, high arches, than in the wide, low ones—and adherent secretions set up irritation. To still further prevent the flow of secretions, we have in these cases the narrow anterior nasal passages which do not permit as good a current of air to reach the post nasal space. The vibrating ciliated epithelium thus has greater obstacles to overcome constantly; and in coryzas, with the narrowing of the angle from

congestion and swelling of the mucous membrane, and with the stoppage of the air current, sometimes complete, through the anterior passages, the disadvantages of the narrow angles are at once apparent. This should give us a practical hint for treatment of the third stage of a coryza.

Irritation of the pharyngeal mucous membrane is, I believe, the immediate cause of this lymphoid hypertrophy. If we add to a high, narrow vault, as a local predisposing cause a constitution of low cellular vitality—the scrofulous diathesis of a former decade, with a tendency to enlargement of the lymphatic glandular structures everywhere, we have an ample explanation why these cases are more prone to so called adenoid vegetations.

On the other hand these phenomena, narrow vaults, poor constitutions and pharyngeal lymphoid hypertrophy do not always go hand in hand. In blooming, healthy, robust children, narrow pharyngeal vaults may give rise to vegetations, while even with wide vaults, scrofulous children frequently have them. They are rarely seen in robust children with low vaults.

The etiology of every disease is always more or less complex and post nasal hypertrophy is no exception.

The conditions of life under which we live, especially in cities, are very favorable to the frequent occurrence of coryzas and general inflammations of the upper air tract. Our absurdly heated houses put our constitutions to the severest tests. The halls as well as the living rooms are seldom below 75° F. In winter we step outside the door and the inspired air undergoes a change of 40° in temperature. It strikes a mucous membrane enervated by 12 hours of equable high temperature. The muscular coats of the arterioles, the fibrils of the sensitive and sympathetic nerves are placed in the same predicament as the heart, lung, leg and arm muscles of the sedentary student who is suddenly called upon to run a race or engage in a wrestling match with an athlete. We know the results in both cases.

Ethnographical research, always interesting, would be especially so to us if investigations could be made as to the condition of the naso-pharynx in the American Indian, and the Central African negro. They have no hot air or steam heating furnaces in their huts, and they do not live in the dust of an American city. The difference in temperature between the warm sun and the cool shade is enough to accustom their vaso-motor nervous systems to more decided changes of temperature.

It is probable that when primeval man tore the flesh from the bones of his prey with his teeth, and the individuals of weak constitution perished in early youth, or early manhood, a properly developed superior maxilla was as necessary for existence as were other physical perfections. Un-

⁶ Am Journal Med. Sciences, Feb. 1889, p. 148.

der these conditions we should expect to find a normal naso-pharynx.

It was once asserted that cases of adenoids were confined to the damp, cold localities of the northern seaboard. They are probably much more common in this locality than far inland. They are more common in cities than in the country, one reason being perhaps that the throat specialist flourishes, *par excellence*, in cities. They follow the irritations set up by scarlet fever, diphtheria and measles. In fact anything which will set up persistent or often repeated irritation with the predisposing factors mentioned may be a direct cause.

It must be remembered that these tumors are of slow growth. They have usually existed a long time before the symptoms they cause become sufficiently marked to attract the attention of the child's guardian or of his medical attendant. The increase in size, which they attain from some acute and severe attack of coryza, from the pharyngeal inflammation of scarlet fever, or of measles, or of diphtheria, may cause it to appear that the condition has not previously existed. It must be a fact that they may exist even in considerable volume without ever giving rise to appreciable symptoms, as Dr. Cohen's case illustrates.

In the various papers on the subject so much has been said of the symptoms and sequelæ that further repetition would be tiresome and superfluous.

If you will observe the small cavity which makes up the naso-pharynx and posterior openings of the nostrils in the specimens from the still-born infants I have shown you, you can appreciate that a small mass of tissue would be capable of causing a good deal of obstruction.

Where the condition is suspected examination should at once be made, but this should only be undertaken in the absence of any unusual pharyngeal or nasal inflammation.

Dr. Delavan (*loc. cit.*) has reported a case in which hypertrophy of the pharyngeal tonsil was very apparent during attacks of coryza and pharyngeal inflammation, while in a state of quiescence the mass sank into comparative insignificance.

I have very frequently observed the same thing with these lymphoid growths. In one case which I had examined by digital exploration and had detected their undoubted presence, I made an appointment for an operation when the child should have recovered from a slight coryza she had at the time of examination. At the time appointed the child was etherized, and on introducing the finger into the naso-pharynx to hook forward the palate and locate the growths, I was astounded to find no trace of them beyond a little roughened feeling to the pharyngeal vault. The operation was postponed and a lesson learned.

In making an examination, if the examiner is accustomed to the use of the rhinoscopic mirror an attempt should always be made, whatever the age of the child, to use it. In a certain proportion of cases it is absolutely impossible for the most patient and experienced of examiners to succeed with the mirror.

Chatellier, in fifty patients, was able to make a diagnosis in forty-one, the youngest of whom was five and one-half, while in nine, the oldest of whom was 12½ years, digital examination was necessary. As far as my own experience goes, I should think the proportion was about the same, though I am sure, without having any distinct recollection of the fact, that I have succeeded at an earlier age than 5½.

Nevertheless in the child little more than their mere presence can be made out with the mirror. A mass of grayish-red tissue apparently springing from the posterior or lateral walls obstructs further view. When the child is anaesthetized for the operation is time enough to make out the extent and the situation of the growths. Digital examination is extremely uncomfortable for the little patients, and simply because they cannot express their feelings in the flowing and forcible language of the adult American, is no reason for sticking the index finger into the naso-pharynx. I know I am preaching what many of us, myself among the number, do not strictly practice, but in the hurry of a large dispensary clinic the requisite time and care cannot always be taken. The use of cocaine in the examination by mirror of the post-nasal space is of very uncertain effect. Occasionally it works like a charm, but more frequently it either has no effect at all in overcoming the reflex spasm, or, as often happens, it aggravates the irritable condition very much, sometimes producing intense retching and gagging, and renders the patients half frantic in their effort to get rid of the feeling of a foreign body in the throat which it produces. In the adult, posterior rhinoscopy, I believe, is nearly always possible to those accustomed to the use of the mirror.

Various forms of palate hooks have been invented. While some claim to be able to derive advantage from their use in examination, there are many who think them useless. In very tolerant patients who bear cocaine in their throats well, I have found the self-retaining one invented by White, of Richmond, of advantage in operating in the post-nasal space with the galvano cautery. For simple examinations they are superfluous, and it has been my experience that they are worse than useless in irritable throats, often causing uncontrollable gagging and vomiting.

In dealing with the question of operation it is necessary to divide the cases into two classes: those in whom general anaesthesia is neces-

sary, and those in whom simple cocainization is sufficient.

Practically, nearly all those of 12 years of age or under fall in the first class, while etherization is rarely if ever necessary after 15. Between these limits it depends on the patient's individual characteristics. A child will often allow easily enough the first introduction of the forceps, but rebels at all subsequent attempts, and unless one is sure of success it is best to use general anaesthesia at once—as without it many sittings are often necessary and children do not bear these well.

Moreover, in children the naso-pharynx is so small, that little is usually to be gained by the intermittent use of the mirror, while in the adult pharynx the view obtained is of the greatest importance.

If adenoid growths are accidentally discovered in a child's naso-pharynx, which give rise to no symptoms, it is best not to disturb them. They will nearly always be small in amount, and after atrophy in adolescence will probably leave behind no more cicatricial tissue than the operation itself would occasion. The child's guardian should be warned of their presence, and should any of the well-known symptoms of mouth-breathing, snoring at night, earache or deafness begin to appear surgical interference should at once be undertaken. The operation is a trifling one, the relief is nearly absolutely certain, and if left to themselves the sequelæ may be serious if not disastrous.

Nearly every operator has a method of his own when it is necessary to use an anaesthetic. Many use chloroform which is said to be less dangerous in children than in adults. Most operators produce complete anaesthesia. I believe this to be a mistake. There is always an early stage, that of primary anaesthesia, when pain and the reflexes are abolished for a few minutes, which is long enough to hook forward the soft palate with the finger, and with the post-nasal forceps thoroughly clear the post-nasal space. There is not then danger of blood and tissue getting into the larynx, the patient recovers more promptly, the bleeding is less, and the reaction slight. Immediately after the first growths have been severed, allowing the head of the patient to fall over the edge of the table will put it in the position of Howard, and allow the blood to pour out of the nostrils. This should only be resorted to for a few moments as the position causes pressure to be exerted on the anterior cervical veins which increases the amount of hæmorrhage. This is nearly always very trifling in itself, but when the patient is deeply anaesthetized blood flowing into the trachea has occasionally produced very alarming and frequently very annoying results.

Notwithstanding the usually prompt cessation of hæmorrhage, there are several cases on record

where the bleeding was excessive. Delavan' (*loc. cit.*) has reported a few cases, and Woakes one or two. After cocaine anæsthesia in which three or four comparatively small pieces were removed from the naso-pharynx of a young lady, I have had very prolonged and profuse hæmorrhage. The patient lost considerably over a quart of blood, and it was finally necessary to introduce an absorbent cotton plug soaked in a solution of the nitrate of iron into the post-nasal space, which was effectual in checking the bleeding. In this case I had at a previous sitting removed a much larger piece without more than the usual amount of hæmorrhage.

Voltolini reported a death from a mass of the growths falling into the glottis, but such an accident with the cutting forceps and with the precautions I have mentioned, can be almost ruled out of the list of possibilities with partial anaesthesia.

I believe that the great majority of operators prefer some form of the post-nasal forceps, first used by Loewenberg and modified into different special patterns by nearly every laryngologist of note. The one devised by Gradle, of Chicago, has the advantage of a larger cutting surface, and thus more of the mass can be removed at the first grasp, which is a great advantage since the field of operation is afterward filled with blood and mucus, the detection and seizure of the remaining fragments much more difficult, even when the instrument is guided by the index finger.

The use of the finger-nail alone, or armed with a steel scraper, is only effective for small sessile growths, especially on the sides and posterior wall of the pharynx. I have found some of the various forms of curettes useful for this purpose.

It is probable that no operation is so thorough that all vestiges of the growths are removed at any one time. While desirable, this is not imperative, as when the blood supply is once broken up, small remaining fragments atrophy and become insignificant.

In older patients, who readily learn to control their faucial muscles, and their apprehensions, it is preferable, I believe, always to use a 10 per cent. solution of cocaine, which makes the parts insensible and allows the use of the mirror.

As before said, there is the greatest difference in the way patients bear cocaine in their throats. This is true not only in regard to reflex phenomena, but also as to the abolition of pain. Without cocaine, the pain is usually not so severe as to be unbearable; but with such a powerful agent in abolishing it altogether, there is no excuse but the idiosyncrasy of the patient for not using it. Two or three grasps of the forceps is usually all that can be made at one sitting, as the field of view becomes obscured in the post-nasal mirror,

⁷ Cartaz (Arch. de Laryngol., etc., June, 1890) reports several others.

by blood. Small shreds and protuberances of tissue may be burned down with the cautery—and here, in tolerant patients, the palate retractor may be of service. A number of sittings, with a week or ten days between them, is frequently necessary before the post-nasal space is freed from the obstruction. A weak, warm carbolized douche may be gently used two or three times a day. For a day or two after an ether operation, the child should be confined to the house, and for several days longer some care should be exercised in preventing him catching cold. There is very little reaction after the operation. Older patients need rarely be confined to the house in good weather.

Occasionally, though very rarely, I have seen a previously quiescent otitis media light up after a post-nasal operation and give some trouble, but this always subsides under proper treatment.

In adult patients, it is a matter of fact which experience, some of it quite chagrining, has impressed upon me, that deafness having its origin in post-nasal trouble and its accompanying Eustachian catarrh, is usually susceptible of only a very moderate degree of improvement, if it has existed any great length of time. The improvement in the local condition of the naso-pharynx nearly always ameliorates the aural trouble. Eustachian catarrh is, however, met with, and not infrequently where the naso-pharynx is comparatively healthy. Sunken drum membranes and ankylosis of the chain of bones are met with, in which there is neither naso-pharyngeal nor Eustachian trouble in activity. These have doubtless existed, and are the cause of the condition, but the subacute inflammation has subsided, leaving behind it more or less cicatricial change in the mucous membranes, which is of little moment. But the mechanical apparatus of the middle ear, more delicate in its structure and more highly specialized in function, has suffered irreparable damage.

Therefore, in adults with post-nasal obstruction and aural symptoms, we must give a guarded prognosis. We must have in mind the possible extent of pathological changes, and that depends, in a large degree, on the time the symptoms of Eustachian deafness have lasted. The results of post-nasal treatment in middle ear troubles are brilliant—so brilliant, in fact, that they have inflamed the imaginations and blinded the eyes of many otologists and rhinologists; but the stubborn facts remain, that a large proportion of these cases are incurable, and many of them susceptible of only a very moderate degree of improvement.

THE Honorary Degree of LL.D. has been conferred by Dartmouth College on Dr. Edward Cowles, the Superintendent of the McLean Asylum in Massachusetts.

REPORT OF FIFTEEN CASES OF PUERPERAL ECLAMPSIA.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY JOHN G. MEACHEM, M.D.,
OF RACINE, WIS.

There is hardly a subject connected with obstetrics, or medical practice, that has been spoken and written upon so much as puerperal eclampsia, and yet the profession seems to be as unsettled in regard to its treatment, as it was forty years ago. One practitioner adheres to the long taught plan of bleeding by venesection, another pins his faith upon opium, chloral, chloroform, veratrum, etc. The first discards opiates and narcotics, as a rule, while the other would think it almost criminal to open a vein. Success has without doubt attended both modes of practice, but there are cases where the exclusive adoption of either, would prove disastrous. I propose to give to this Section the history of a number of cases, fifteen in all, that have come under my own observation and management, where venesection has been resorted to in all of them but one, and the favorable results will, I think, prove the great value that the remedy exercised in them.

Case 1.—Mrs. B., æt. 25 years, had not been in her usual health for several days. She was in her seventh month of pregnancy, but had passed over all the early symptoms of her condition, and for two or three months had been unusually well. She lived alone with her husband, who was a farmer on rather a small scale, and she had been in the habit of doing all the necessary work connected with her housekeeping, for her small family. She was sitting at table with her husband, when all at once, without any premonition or warning, she was seized with a terrible convulsion. I was immediately sent for, but as I resided about two miles from the patient, an hour must have elapsed before my arrival. I found her unconscious, but not in a convulsion, although she had had three before I saw her. Upon inquiring into her condition, I found it as just stated. A vaginal examination disclosed the fact that she was in labor, and advancing with considerable rapidity, and while I was making it, she went off into another convulsion, which continued until she was bled to the extent of 15 ozs. All turgescence of the head and neck, which was considerable, was at once relieved, and she was easy and quiet for an hour, when her labor was terminated naturally and without more convulsions. Her recovery was quite rapid.

Case 2.—Mrs. C., the wife of a prominent lawyer and Judge of Western New York, during her third confinement, at full term, was attacked with eclampsia. The family physician was a homeopath, and he had in consultation another of his school. She had had ten convulsions when I was

sent for. I found her totally unconscious, and far advanced in her labor, so that I was enabled to deliver with the forceps in a few minutes. She had some slight convulsions after, and died comatose in about two hours. She was not bled, as she was too far gone to expect any benefit from it, when I was first summoned to the case. Had I seen her early, I should certainly have taken 15 or 20 ozs. of blood, and would have expected recovery.

Case 3.—Mrs. A., a Norwegian by birth, a strong, powerful woman of 25 years of age. She had been in labor several hours, when she was seized with a very severe convulsion, which lasted until I took 20 ozs. of blood from her arm, which I found great difficulty in doing, on account of her unusual strength, used in an ungovernable manner. After the bleeding she quieted down, and I was enabled to deliver her with the forceps very soon, of an unusually large, vigorous child. She had no more convulsions, and exhibited no ill effects from the loss of the 20 ozs. of blood.

Case 4.—Mrs. B., æt. 30, a stout, fleshy woman, two days after her fourth confinement, was suddenly attacked with severe pain in the head, and a terrible convulsion soon followed, which was repeated again and again until six had occurred before I could get to the patient. Her face was purple and her breathing stertorous. A vein was opened as soon as possible, and a liberal quantity of blood abstracted, which had the effect of lessening the force and frequency of the paroxysms, but not of arresting them, nor did chloral and chloroform, which was afterwards used, for she died in a few hours in profound coma, the result of an extravasation of blood within the cranium, which doubtless occurred early in the case. I attended this patient in all her confinements, and they were easy and natural, and the last was the most rapid of them all.

Case 5.—Miss B., a large woman every way, about 20 years of age. She passed through the whole period of her gestation, without any member of her family suspecting her pregnancy. She suffered severely from "colic," as she said, during the whole of a night, and early in the morning was attacked with a convulsion. A physician of our city of considerable experience was called, but did not for a moment suspect that the spasms were connected with a puerperal state. After witnessing a few of them, he desired consultation, which was called, nor did the consultant have an idea of the nature of the case. The convulsions continued to recur in spite of all their treatment, until 12 o'clock M., when I was added to the consultation board. She was in a convulsion when I first entered the house—her face livid, almost black, and the blood-vessels of the head, face and neck turgid and distended to an extreme. She was totally unconscious, and the breathing was heavy and labored. Up to this time, not a suspi-

cion of the true nature of the case had dawned upon the minds of her medical attendants, although both were experienced practitioners, and considered themselves well up in their profession; but the patient was unmarried, very large, always having a very full, prominent abdomen, and above suspicion of being capable of anything wrong. These were the misleading points, and most effectually did they work. When I asked if a vaginal examination had been made to ascertain if the uterus had anything to do in connection with the convulsions, I was promptly answered in the negative. I immediately instituted such an examination and, not to my astonishment, for I took in the situation at first sight, I found the head of a child low down in the pelvis, with the uterine os thoroughly dilated. A vein in the arm was opened and 20 ozs. of blood taken, and almost immediately after, the forceps were applied, and she was delivered of a fine large, but dead baby. She had no more convulsions and in a few hours recovered her consciousness, and at the end of two weeks, was as well as most women at that period after confinement. She had more than twenty convulsions.

Case 6.—Mrs. S., æt. 20 years, after having been in labor a few hours, with her first child, was seized with a severe convulsion. She was in the care of another physician, but as soon as the spasms came on, he made himself scarce, on pretense of going after medicines, instruments, etc. It was at 10 o'clock P.M., after waiting more than an hour for his return, during which time she had four convulsions, that my son and partner was sent for, and I soon joined him in attendance. At the time of our arrival she had had six spasms. A vaginal examination revealed a fair progress in her labor, but not sufficient advance to be able to apply the forceps. She was bled freely, and for an hour escaped further convulsions, when another came on. A few ozs. more blood was taken, when a second examination was made, and sufficient relaxation found to admit of the easy and safe application of the forceps, and she was delivered of a large, healthy boy. She had no more convulsions, and made an ordinarily rapid recovery.

Case 7.—Mrs. C., in confinement with her first child, although she had miscarried at three months more than a year and a half before. She had been in quite hard labor four or five hours, but on my arrival I found her making good progress. About an hour after, while sitting by her bed, I noticed a squinting of the eyes, and very soon she screamed out, "I cannot see. I am blind," and a most terrific convulsion immediately followed. As soon as I possibly could, I opened a vein, and took away 16 ozs. of blood. She came to herself, but complained of intense headache. Her labor pains continued irregularly for an hour, when her face became flushed, and a slight spasm recurred. A

few ounces more blood was taken, the forceps applied, and her labor ended. She had no more convulsions, and made the usual recovery.

Case 8.—Mrs. M., æt. 19 years, in labor with her first child. Was in the care of Dr. Meachem, Jr. (with myself in consultation), who had been with her some hours. There was nothing unusual about the case until eclampsia supervened, except, perhaps, a somewhat rigid os. She had been bled freely after the first convulsion, which greatly reduced the force of those that followed, and relaxed the uterus, so as to allow it to be emptied of its contents by the forceps without difficulty. She had three very light spasms after the birth of the child, but they were of no account and, although a somewhat delicate woman, she made as good and rapid recovery as the majority of parturients.

Case 9.—Mrs. M., æt. 26, sister of Case 6. She had a convulsion a few hours after the beginning of her labor, and a second came on while I was getting ready to bleed her. After copious depletion, she was delivered, with the aid of forceps, of a large, vigorous child. She had no more spasms. It was her first labor.

Case 10.—Mrs. L. was a short, stout-built woman, of 21 years of age. She was taken in labor at seven months' term. It was early in the evening, and at midnight I was sent for. She had had already five convulsions, as some little interval had elapsed from the time of their sending for me until I arrived, as I was elsewhere engaged at the time. I bled her freely, and terminated her labor with the forceps within half an hour. She had two slight convulsions subsequently, but that was all, and she recovered as soon as others and as well, not noticing the loss of blood in the least. One year after, I attended her again, when her labor was every way natural and rapid.

Case 11.—Mrs. S., æt. 30, had been in very hard labor twelve hours, and when the head was pressing hard upon the perineum, with every prospect that another hour would terminate it, she was seized with an unusually severe convulsion. I bled her as soon as I could, without regard to quantity, which relaxed her all that could be desired, so that without the least difficulty I applied the forceps and delivered. She had but one slight spasm following. This was her first and, so far, last labor.

Case 12.—Mrs. W., æt. 24, who had been in moderately hard labor a few hours. Her pains were not pressing, nor had she made much progress, when she was attacked with convulsions. The first was not severe, but while preparations were being made for bleeding, she passed into a second, which was violent and protracted. As soon as possible, a vein was opened, and a pint of blood taken. The child was born naturally after four hours. The arm was re-corded, and a few ounces of blood taken twice, after the large bleeding,

when symptoms of spasms seemed to be returning. None, however, came, as they were averted by this means.

Case 13.—Mrs. B., 20 years of age, was attacked with eclampsia just as the head emerged through the externals, after a labor of several hours. She had a succession of five convulsions, but after a liberal bleeding, no more occurred. It was her first confinement. She recovered quickly and well.

Case 14.—Mrs. M., æt. 23. Her first child. Her labor was natural, but protracted, on account of the child being out of proportion to the size of the mother. A few moments after delivery, she was seized with a convulsion of unusual severity. She was short, thick-set, and very plethoric. She was at once copiously bled, which prevented a recurrence of the spasms.

Case 15.—Mrs. S., æt. 25 years. Had been a teacher in our public schools for some years, was a second wife, and had been married not quite a year. She was short in stature, thick-set, and very strong. She had been in labor twelve hours, being attended by a very intelligent midwife, and everything seemed to be progressing favorably, and naturally, and hope was extended to her that she would soon be relieved, and be a mother; but without warning, she was seized with eclampsia. I was in attendance in half an hour, and she was then in her third fit. As soon as I possibly could, I bled her 15 to 20 ozs., and then found that I could apply my forceps, which I did, and delivered her of a 9-lb. child. She was unconscious after, for two hours, and not for many hours could she realize that she had been confined. She recovered as rapidly as though her labor had been unattended with the convulsions.

Out of these fifteen cases, but two deaths occurred, and they were from apoplexy, the mischief in Case 4, being accomplished with the first convulsion. There was more or less bloating in every case, but not one furnished the opportunity for an examination of the urine before labor. In both fatal cases the bloating was very marked. Fourteen out of the fifteen patients were bled, and all but one recovered. Most of them had no convulsions after the first bleeding, and in those where they did recur, were greatly moderated in force and frequency. That the bleedings aided greatly in permitting an earlier application of the forceps, thus enabling us to sooner deliver, I am confident; and the great importance of this procedure I think few obstetricians question at the present time.

Dr. Meigs says, that the first thing to be done in these cases (referring to eclampsia), is to remove the cause by delivery, and the second to moderate the effect by venesection and evacuants; but my own experience is just the reverse. Bleed first, and deliver afterwards, as few cases will al-

low the application of the forceps until some relaxing means has been first resorted to.

Leishman says, that uterine action is much more likely to be the effect, than the cause of eclampsia, to which sentiment I cannot subscribe, for all of my cases, with one exception, were preceded by labor pains, and labor was not the result of convulsions. Many cases of eclampsia could be prevented, if the opportunity for treatment was afforded a few weeks before labor; but the majority of cases are not seen by the physician until he is called to attend them at parturition.

Timely and appropriate treatment, could it have been had, would doubtless have saved some of my patients much suffering and great danger. The lesson to be drawn from the history of these cases is, to bleed liberally and deliver early; that is, as soon as sufficient relaxation will safely allow the application of the forceps. If urea be the cause in a majority of the cases of puerperal convulsions, certainly a sudden abstraction of a quantity of blood is the quickest way to relieve the system of it, and observation has convinced me that delicate patients endure the loss of considerable blood without weakening very much under it—from the fact, probably, that a large quantity of poison has departed with the blood, which before had been a source of depression and mischief, and if congestion of any part, has anything to do in causing eclampsia, certainly nothing would act so promptly and so surely as venesection in relieving it.

DISEASES OF FEMALE PELVIC ORGANS.

WHEN TO OPERATE BY ABDOMINAL SECTION.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY M. B. WARD, M.D.,

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In accepting the kindly request sent me by the President of this Section of the American Medical Association, to read a paper on "some subject connected with Abdominal Surgery" on this occasion, I was not in the least unmindful of my unfitness for such a task.

I have but one special reason for attempting to appear before you with a few remarks based upon the above title. I thought a paper on this subject from a *Kansan* might be a "novelty," in view of the fact that most of the papers which will be presented for your consideration, will come, (and justly), from eminent men residing in the great medical centres.

The mass of physicians seem to have a very imperfect understanding of pelvic diseases. "Pelvic cellulitis" as taught in the past, and understood by many at the present time, has had to bear the opprobrium of every abnormal condition of the female pelvic organs. It is the natural

result of the teachings of most of the authors on pelvic affections.

It would not require a very elastic imagination to conclude that some of the authors on diseases of women have never seen the inside of a diseased pelvis, judging them by their descriptions of the pathology of pelvic cellulitis, peri-uterine cellulitis, pelvic abscesses, etc. I cannot say that there is no such a condition known, as general pelvic inflammation, but I do not believe such conditions are found present in any case, as a *primary affection*. In other words, the intermediate or cellular tissues, are not primarily ever the seat of disease, of sufficient gravity to cause abscess.

There is no possible way for the pelvic organs to become diseased, except it be by transmission from without in, and that through the only channel known to anatomists, via vagina, uterus and Fallopian tubes. If this is a true statement, what can cause an inflammation of the pelvic organs, (barring violent traumatism), except it be by transmission of the germs by the route just mentioned?

To those who are familiar with the minute anatomy of the tubes, it is but natural to expect that the tubes would imbibe the greatest virulence of the poison in its passage through the narrow lumen of these organs, and thus become first diseased.

It seems to me, therefore, entirely within the bounds of propriety, to say in this connection that the pathology of pelvic diseases has not been understood by the writers of our books on diseases of women. The question then is, what are the morbid conditions in cases of pelvic diseases? Numerous, indeed, may be the complications. There may be ovarian cysts, parovarian cysts, abscess of ovary, abscess of the broad ligaments, hæmatocele of the broad ligaments, hydrosalpinx, ectopic pregnancy, etc.

All of these pathological conditions have been the rounds of the whole world under the title of pelvic cellulitis, and these are the abnormalities, one or more of which will be found in every case of so-called pelvic inflammation.

It is not my purpose to dwell upon the diagnostic symptoms of pelvic diseases. To attempt to do so would prolong this paper beyond the limits of propriety. It will be subsequently necessary, however, to make mention of some of the symptoms, in order to draw the line between operative and non-operative cases. This brings me to consider briefly the second section of my title: namely, when to operate by abdominal section.

This is the most important question now before the surgical profession. It is a question which must be answered (except in a general way), by each operator for himself, when brought face to face with his patient. A thorough discussion of

this great question will be invaluable to all interested. There are so many different elements to be considered in each individual case, that it is painfully difficult to always know how to decide. The personal application of the *golden rule* will materially assist the surgeon in his conclusions.

In deciding upon any grave operation, the surgeon ought always to exchange places, as it were, with his patient, especially when the operation is to be done to relieve pain, rather than to save life. Is it not more natural for the surgeon to reason thus: "Well she might as well be dead as alive, for life is a burden to herself, and she a great care on her friends." To the patient, the surgeon says, "your health, as you well know, has been and is now most miserable; you cannot ever enjoy life in your present condition, and an operation will, if successful, make you perfectly well; you have a good chance for health, although you might die."

Should she not embrace this only chance of health, with the reasonable certainty that she will survive the ordeal, when in the hands of trained abdominal surgeons?

I answer, yes. In my judgment, she ought, but she must be allowed her own choice. Suppose she says: "No, doctor, I cannot quite make up my mind to risk my life on the altar of an uncertain promise of surviving the operation, and still more, the possibility that something now unseen, may occur to prevent my permanent recovery, when I already have a reasonable certainty that I will live for years—of course, not in health—but at least exist without an operation. However, doctor, if after a careful analysis of my case, you, my friend and physician, aye, more than that, an expert in cases like mine, unhesitatingly advise me to have the operation performed, I will abide by your judgment and submit willingly." The foregoing is a homely, but *true* picture of many cases in the experience of every physician practicing gynecology. What shall our decision be? Is this not a trying position to be placed in? It seems to me that no honest, conscientious surgeon, could treat lightly such a responsibility. Of one thing I am seriously impressed: namely, no *monied* consideration should be allowed to enter into the reckoning, when human life is in the balance. I cannot better express my thought in this connection than to refer you to the words of a young English officer, by name DeLisle.

When he was a midshipman of 16, a storm occurred during his watch, in which a mast was swept away. The captain came on deck in a fury. "Why did you not send up a man to reef the sail?" he demanded of the boy. "I should have lost my own life if I had gone to reef it," was the reply, "and I will not send one of the crew where I dared not go myself. A mast is

not worth as much as a man's life." We must not be influenced in our decision by any consideration of personal gain, either directly or indirectly. It is our bounden duty to place ourselves in the position of the patient, and then, with our knowledge of the benefits to be obtained, the risks to be taken, the value of life to us, even though we are not well; if, in view of all the facts, we can say to the patient, yes, if I were you, I would have the operation performed, we can then be certain of a clear conscience, and this will give us that true, genuine courage, which every physician should possess.

It is not always necessary to make the decision for the patient. Often, indeed, do we find women who have suffered so much and so long, from many physicians of every creed, women who have been subjected to every known method of treatment, cervical dilatation, cervical applications, vaginal paintings, vaginal douches of hot water, curetting of the endometrium, applications introduced into the cavity of the uterus by means of spray syringes and uterine applicators, the use of galvanism and faradism, in every known manner yet discovered by an ever busy army of experimenters in this wileful art, and still she is a great sufferer, always in pain, too weak to be of any service to herself, and no aid to her family; cannot enjoy society at home or abroad, for she is suffering from constant fear of recurring spells; really attacks of local peritonitis, and perhaps not unfrequently of general peritonitis, which forces her to take her bed, and there remain for days and weeks, only to suffer the same experience before she has nearly recovered from the former attack. If she has not been so unfortunate as just pictured, perhaps she has suffered from one or more miscarriages, from which she had not fully recovered before she was exposed, either to the influence of germs, which invaded the uterine cavity and then the tubes, causing tubal infection, into that abiding place, "from whose bourne" no microbe ever returns, thus causing the symptoms and conditions, which in the other cases were brought about by too much of unsurgical and unmedical interference. Or, it may be the unfortunate patient has been exposed to that most dreadful disease, the greatest curse to womenkind, gonorrhoea, and this specific poison has been transmitted to the tubes, which is almost certain to occur, setting up an inflammatory condition, more destructive than all others, and which cause untold suffering.

These are the classes of cases that will be always ready for anything which promises them a reasonable certainty of relief from their suffering, and they will assume all the risks.

All that they will require is that the surgeon be a skillful operator, and be able to give them the benefit of modern surgery. What course shall we pursue when this class of cases present

themselves for treatment? They should first be prepared for an examination. This is of greater importance than it may seem on first thought. I have yet to see one patient, who was complaining of pelvic trouble, but who needed a thorough evacuation of the contents of the bowels before an accurate diagnosis could be made.

First, then, administer a saline cathartic, and request the patient to report again in twenty-four or forty-eight hours. If upon examination you find the uterine appendages diseased, with a decided enlargement on one side, or both, and the uterus fixed and bound by bands of adhesions, much tenderness and pain, even when care is exercised in the bimanual manipulations, (and it is only by the light, gentle touch, that a correct diagnosis can be made), with a history of irregular and painful menstruation, especially when the pain comes on a day or two before the discharge; great prostration when obliged to stand erect or walk; frequent micturition, often amounting to a decided vesical irritation, and urethral tenesmus; we can be reasonably certain of tubal disease, but to differentiate the exact condition will not always be possible.

The fact being once established that there is chronic salpingitis, with distended tubes, filled with serum or pus, an abdominal section, and the removal of the uterine appendages is the only means by which a cure can be promised.

At this point it was my intention to say something regarding the use of electricity in the treatment of these affections, but I will not impose on your indulgence to say more than this: I do not believe any case of tubal disease, where there are pus pockets and occlusion of the lumen, was ever cured or ever benefitted by the use of electricity. It is quite unreasonable to expect such remedies to do within the body, that which they cannot do on the outside.

In regard to the necessity for abdominal section, in any given case, as above described, it is always best, when possible, to place the patient on saline medication, used daily, with bitter tonics, and recommend good nutritious food, great care from exposure to inclement weather, rest in bed during menstruation, and carefully watch the case noting the improvement, if any, thus giving your patient all the opportunity possible to get along without surgical interference. The daily administration of small doses of sulphate of magnesia, will keep women quite comfortable even though they have been suffering for months from engorgement of the pelvic organs. If the patient does not make permanent improvement under this treatment, nothing will be gained by postponing the operation. Two important features are connected with this plan of procedure. The first is, you prepare the patient for the operation, if it is found necessary; and second, when there is some doubt as to the propriety of an op-

eration, it keeps the patient under your observation until you have time for reflection, and to watch the symptoms. In some cases an operation may be thus postponed for an indefinite time, and in others, the necessity for immediate interference will be emphasized.

My friend, Dr. Joseph Price, of Philadelphia, has reduced this question to a science. His method is, "never to operate for pain alone, but only to save life."

When patients come to the surgeon from some distant place, much more difficult will it be to decide as to the proper course. Even with these cases, a few days of preliminary treatment as before described, under the immediate charge of the surgeon, will help to clear away any doubt, and give the patient the benefit she is entitled to.

There are, of course, many cases whose symptoms point so positively to serious trouble, that there remains but one course to pursue; namely, operate as soon as possible. There is a *moral* question which must not be lost sight of in the discussion of this subject. It seems to me, all other conditions being equal, we are bound to postpone surgical interference on unmarried girls, who are likely to marry and bear children, and also when the patient is a young married woman, who ought to bear children, if possible. I am of the opinion that it is rare, indeed, for this class of cases to become pregnant, but inasmuch as it is possible for them to conceive, if the ovaries and tubes are not entirely diseased, they should have the benefit of the one chance in many, if the chances of waiting are not too hazardous. How often, indeed, is it true that women lose their lives because of procrastination, in deciding on the course of treatment. It is the plain duty of the patient to share with the surgeon the responsibility of waiting, if she desires to do so, after she has been informed of the great risks which she has to take by postponing the operation, when the case is clear that she has no other chance of regaining her health, and that in place of improving, she is certain to get worse, and liable to a fatal peritonitis at any time.

Finally, the consummate skill of the surgeon must be exercised in any operation on diseased pelvic organs.

If we have had the training which the gravity of the operation demands, we will learn one thing better than all others, to-wit, that it is not *true bravery* which impels a surgeon, without having first been trained in the modern methods of successful abdominal surgery, to recklessly operate on these cases. It is on the contrary *foolhardy* pluck, the result of a determination not to be outdone by others, and indicating a lack of appreciation regarding the difficulties and dangers of these operations. Success is obtained only by the most careful painstaking in every case. Every step of the operation must be perfect, if

we expect uniform results. The fact that the surgeon has had a large number of successful cases, is no reason why he should become careless, or neglect the little points in a single one of his operations.

The poet has expressed my views of surgical bravery in the following lines :

"Be bold, be bold, and everywhere, be bold!
Be not too bold! Yet better the excess
Than the defect; better the more than the less!
Better like Hector, in the field to die,
Than like a perfumed Paris, turn and fly."

GASTRO-HEPATIC FEVER.

Read in the Section of Practice of Medicine at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1880.

BY THOS. LEGARÉ, M.D.,
OF CHARLESTON, S. C.

The subject of fever has engaged the attention of medical men for many centuries. Some of the most able minds of every age have employed their powers in the examination of this important matter, and have endeavored to hand down to posterity the result of their observations and reflections. But what was practical knowledge to them, has been too often anything but knowledge to those who have endeavored to study and understand their works. We may take two cases of fever, unlike in cause, in tendency to favorable or unfavorable termination, and widely differing as to medical appliances necessary to produce a favorable result, and yet there may be such sameness in their general and even particular characteristics, that he who can make Nature breathe in every line, may find it difficult to write a description such that one may readily be distinguished from the other, even by men highly skilled in book reading and book making. Hence, my few imperfect observations as made in Charleston, S. C.

Few months pass, in which I have not been called to attend this fever, to which I have given the name gastro-hepatic. This name I will beg leave to apply to my remarks upon this malady, promising that, worthless as they may be, they are entirely my own, and correct so far as I can transcribe the book of Nature from which they were drawn.

Gastro-hepatic fever may be divided into three varieties :

1. A regular remittent, rapidly running into, or assuming a continued form.
2. A continued fever from the commencement, in which all the prominent departures from health are discoverable in the stomach and liver.
3. All the manifestations of disease are made known, in a great measure, through the nervous system. Here let me observe, however clear in the beginning the propriety or practical utility of

dividing this fever into different varieties, it becomes less and less apparent as the disease advances, and at the end of the first week, or thereabouts, we often find it very difficult, even by most minute examination of the symptoms then present, to determine to what variety the case belonged in its commencement; the varieties are disposed to run one into another, and become blended together, but this is less true with regard to the third, than the first two.

Gastro-hepatic fever may also be divided into three stages :

The first is the premonitory or forming stage, and includes a period of time very difficult to fix, as it may vary from a few hours to as many weeks.

The second includes about the first seven days after the patient is fully under the influence of the disease; it is the stage where high vascular excitement may be present, and in it active purgatives are not absolutely forbidden.

The third is marked by exhausting diarrhoea, and general prostration of the vital powers; it runs from about the seventh to about the ninth day after the disease is fully developed, at which time we may expect the sudaminal eruption, discharge of blood from the bowels, and swelling of the parotid glands, all of which I have been led to consider as critical.

There is no constant mode in which gastro-hepatic fever assaults its victim. In one instance it advances almost imperceptibly, the patient being unable to fix the time when he grew unwell, or to trace his indisposition to any probable exciting cause. In another case the attack is sudden, or the patient can readily fix the day when he grew sick, and charges his illness to a fox hunt, to swimming a creek, being out in a heavy rain, or to some excess, severe fatigue, or exposure to great heat or cold.

The symptoms in the first or forming stage, in the first variety, when such attacks are preceded by any indisposition, are very similar to those which I will presently enumerate as occurring in the second, but commonly of shorter duration. More frequently, however, we have, in the very commencement, a full-formed chill, followed by a remittent fever of the tertian type. The characteristics of remittent fever begin to disappear about the third day, and (nine times out of ten) before the fifth or sixth they are no longer discoverable, and we have in our hands an unquestionable case of gastro-hepatic fever. The tip and edge of the tongue, in the commencement, usually present the appearance of a red, or, in cases of great prostration of the vital powers, a pale red hue, the centre being a dirty ashy or dish-clout color, without papillæ.

In the second variety the patient is sometimes seized when in good health, generally, if not always, in the evening, with a slight creeping

coldness extending up and down the back, not amounting to rigor. Headache, pain in the back and extremities, warmth of skin, disturbed pulse, and all the symptoms that usually accompany increased arterial tension, supervene, though most commonly these symptoms are preceded for some days, perhaps a week or even a longer time, by more or less indisposition, consisting in slight headache, some pain in the loins and lower extremities, a general feeling of lassitude or weakness, irregular appetite, and sleep often disturbed and never refreshing. The common, but by no means constant appearance of the tongue in the commencement of this variety, is a red tip and edge, fading into a rather dense white fur, from which shoot out large red papillæ not unlike those seen in scarlet fever.

In the first and second varieties, more than in the third, we should apprehend sudden and dangerous congestions of the internal organs in the earlier stages, to which under my observation the brain has been most liable.

It would be very difficult to give any description of the way in which the fever assaults its victim in the third or nervous variety, or to fix the day or even the week in which the system first began to be affected. For one, two, or three weeks, or perhaps a longer period, the patient will complain of slight but gradually increasing headache; pains in the loins, arms, legs, and almost every part of the body; lassitude and want of ability to pursue any physical or mental labor; disturbed and unrefreshing sleep; irregular appetite for food, and much impairment of the digestive function. To these may be added some pain in the bowels (I have seen a number of cases ushered in by violent attacks of colic), slight diarrhoea, and sometimes, though rarely, constipation.

On close examination, will often be found—what the patient is at first disposed to deny—that the urinary function is about as poorly performed as that of the digestive. Sometimes one or more, and again all, or nearly all, of these departures from health are present. In the white man, the skin is disposed to assume a dingy hue, and in the negro, a whitish ashy color.

From day to day the patient grows more and more emaciated, till at last, from general weakness, (if not from any local cause), he is forced to confine himself to bed. His inclination is to lie on his back from the first day. Up to this time, the pulse is but little disturbed, save a peculiar quickness which is never absent, and in most cases, some increase of frequency in the evening, accompanied by a skin (especially on the body and head), rather too warm for health. The tongue presents a variety of appearances; at one time it is large and relaxed, making a mouthful, its surface being covered with a white—or rather yellowish-white—fur, through which peep

forth many enlarged papillæ. At other times it is dense and thin, now and then cupped, tip and edge red, centre furred and studded with scarlet-fever-like papillæ; and again it is clean and very red, and occasionally almost smooth as glass—but this last is most likely to be the case where drastic purgatives or some improper medicine or diet have been indulged in; however, in the majority of cases the tongue presents no material departure from health. I have seen the pulse stand for days as low as 30, and for an equal period, in another case, its frequency would be 103; it is almost always more frequent in the evening. At one time it will be found full, bounding and incompressible, or jerking and vibratory; in the next case, perhaps, will be voluminous, gaseous, and very compressible; and, lastly, will be met a case where, from the commencement to the termination of the disease, the pulse will show but little disposition to vary from that of health.

Headache, buzzing in the ears, dangerous congestion of the brain, bleeding from the nose, stupor or watchfulness, low muttering delirium, and every degree of mental derangement, from slight errors of perception to varying madness, may be seen when this disease is prevailing.

The eye may be brilliant or dull. There is a peculiar appearance of the eye, perhaps best expressed by the phrase, "physical glare," that tells of neither thought nor feeling, always occurring after the eighth or tenth day, which is most unfavorable. The appearance that I would describe differs from that which is vulgarly called the "death stare," and may precede death by some eight or ten days. There is a peculiar expression of the face that says as plainly as countenance can speak: "I don't know where I am;" and yet the patient is nothing concerned because he cannot fix his whereabouts.

Hæmorrhage from the nose is not uncommon, and in the earlier stages is sometimes productive of good; in the latter stages it is always a cause for alarm. Hæmorrhage from the gums also is not infrequent; but has never given me much trouble.

Deglutition is sometimes very difficult, and when altogether suspended, as I have found in many cases, is a grave, but not always a fatal symptom.

This disease, under my observation, has sometimes been complicated with inflammation in the right lung, but I have never observed this condition to obtain in the left. And every case is more liable to the cough so common to the advanced stages of protracted fevers where there is great prostration of the vital powers.

Again, there is an eruption that I have found rarely absent, to which authors have given the name of sudamina. In the vast majority of cases, the skin is dry throughout the whole

course of the disease, and in some, and even fatal cases where the diarrhoea had not been considerable, the patient lost but little of the round and plump appearance of health, and this, even where the fatal termination had been delayed to the tenth day; and upon the other hand, the most emaciated beings that I have ever seen, either dead or alive, have been in protracted cases of this disease which terminated favorably; and what is worthy of remark, whilst this extreme emaciation obtained over the body and extremities, the face, and face alone, would be round and full, being somewhat dropsical.

Nausea, vomiting, pain, and occasionally great thirst, we always have; there is always a loathing to food. Grave hepatic symptoms are present in all cases; the function of the liver is feebly or irregularly performed, and a strict examination will occasionally detect slight, and still more rarely considerable, enlargement of this organ. The spleen also is always more or less enlarged, which may be detected by percussion, and careful examination with the fingers. Likewise may be met every degree of tympanitic distension, which symptom is rarely absent, but does not generally attract much notice before the eighth day.

The secretion of urine often, and I believe in most cases, will be found scanty, and occasionally almost entirely suppressed; and I have long since been led to consider that the giddiness, buzzing in the ears, stupor, and watchfulness, and other cerebral disturbances, more especially in the earlier stages, have much dependence on the tardy performance of this very important function; I have never found these symptoms present in any very remarkable degree, when I clearly ascertained the secretion of urine to be abundant. Great muscular debility generally characterizes this fever from its commencement until termination in convalescence.

In the treatment, alterative doses of calomel are given in combination with quinine and bicarbonate of soda. Mercury is a good remedy and indispensable except in the later stage of the disease. A thapsia plaster to the stomach, and the neutral mixture with a little tincture of opium, will always check nausea and vomiting. After the stools become healthy and fever lessened, the calomel is stopped, and the quinine, and soda bicarb., with piperin, continued until the patient is out of all danger. If tenderness or griping pains in the bowels occur, warmth externally, and ginger tea given as a drink, (made from the root ginger and sweetened), which is quite palatable and refreshing.

Opium in this disease is best avoided as bad results have occurred from its use. Where the fever is very high, ice placed to the wrists, and tr. aconite root three drops every two hours, has been of benefit; for the thirst, soda water flavored

with sassafras fresh from the fount is of marked value, the patient eagerly drinking and saying, how cooling it is in allaying the intense heat of the stomach. If stimulants are necessary, bicarbonate of ammonia is the best. I have always excluded everything like active purgatives, or any gastro-intestinal irritant, whether medicine or diet. In fine, the more rigidly I have adhered to the treatment above recommended, the more successful I have been in my practice.

60 Rutledge Ave.

UTERUS BILOCULARIS.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY L. H. DUNNING, M.D.,
OF INDIANAPOLIS, IND.

Of the various forms of malformation of the uterus due to defective development of the ducts of Müller, uterus bilocularis shows the least deviation from the normal, and ranks as second in point of frequency of occurrence. Of the 271 cases of such malformations, the histories of which have been studied by the writer, there were of uterus bipartitus, 14; uterus unicornis, 18; uterus bicornis, 175; uterus bilocularis, 68. This represents all the cases on record and classified in the library of the Surgeon-General's Office to May 1, 1888.

The causes operating to produce these malformations are unknown. The inner walls of the ducts of Müller meet and coalesce previous to the eighth week of embryonic life. The septum disappears between the eighth and twelfth weeks. It is in these periods that the form of malformation is, in the main, determined. When the walls of the ducts fuse, but do not disappear by absorption, the malformation in question results. It is interesting to note, and difficult to understand, how the causes of the malformation leap over a period, and are apparent again, during the time for the development of the fundus.

The septum, which forms the partition wall between the two chambers of the uterus, may extend from the fundus to the external os, to the internal os, or only a portion of the way from the fundus to the internal os. In nearly one-half of the cases, there is a duplex condition of the vagina also, and there is not infrequently deficient development of the Fallopian tubes. It would appear natural that there should be developmental faults in these two structures as well as in the uterus, since they are developed from the same ducts of Müller as in the uterus.

When there is a duplex condition of the vagina, the partition may be complete or incomplete, or vary greatly in thickness, size and shape. The writer has been unable to find a single instance in which there was atresia of one vagina, while this is not uncommon when the defective forma-

tion of the vagina is associated with other forms of congenital malformation of the uterus. In external form and appearance, the uterus does not differ very much from the normal, though usually the body and fundus are broader. Sometimes there is a flatness or slight depression in the centre of the fundus, and sometimes there is a marked fissure. The os is more frequently single than double, yet occasionally will be found a perfectly duplex condition of the vagina, with a perfect cervix in each vaginal tube. So slight is the deviation from normal, in instances in which there is no vaginal septum and there is a single os, the deformity is likely to be overlooked. In the majority of the cases reported, the malformation was discovered either during labor or at autopsy. When there is a double vagina, and each half has within it a cervix and os, it is fair to conclude there is a duplex condition of the uterus, though this is not always true. The form and shape of the body and fundus must determine to which class it belongs. If there is a markedly bifid condition of the uterus, it does not belong to the class we are considering. The passage of two uterine sounds will yield much desired information. The presence of two chambers in the uterus can be readily demonstrated when there are two ora. The same may be said if the uterine septum extends to the external single os, or even if it extends only to the internal os, and the condition be suspected.

Pass a sound along each cervical canal, into the uterine cavity to the fundus. The approximation or divergence of the handles will indicate the directions of the canals.

If the points of the sounds cannot be made to meet, steel to steel, we know there is a complete partition, and if there is a deficiency, it may in this way be discovered. Should the divisions of the uterus into two chambers be incomplete; *i. e.*, should the septum extend but part of the way to the internal os, the fundus be but little deformed, and the os single, I know of no way of detecting the malformation in the non-pregnant woman, except by dilating the cervical canal, introducing the finger into the uterine canal, and making thorough exploration.

The true anatomical condition of the uterus in the patient in the case I am about to report was accidentally discovered.

October 16, 1888, I was urgently requested to visit Mrs. H., whom the messenger stated was flowing alarmingly. I responded at once, and quickly learned that two or three hours previously, Mrs. H. had had an abortion. She was three and one-half months in the period. The embryo had been expelled, and something the attendant supposed to be the placenta. The hæmorrhage had evidently been profuse, for the patient was pale from the loss of blood, and the pulse was weak and rapid. The placenta was retained and partially detached, hence the hæmorrhage. I quick-

ly prepared myself, and introduced one finger into the vagina, pushed it on into the widely dilated os. The finger readily entered the uterine cavity. By pressure of the right hand above the pubes, the uterus was brought well down, so that the fundus was reached by the left index finger within its cavity. Nothing was found within the uterine cavity except a few small clots, so I concluded I must have been mistaken in supposing there was a retained placenta. While washing my hands, the patient had a violent pain, and said she had passed a large clot of blood. There must be a retained placenta, yet how could I doubt my sense of touch. Sitting down by the bedside again, two fingers were introduced into the vagina, and one through the os into the uterus, when it came in contact with the placenta, which was separated from its uterine attachment and removed. I was puzzled, but the thought flashed into my mind, possibly there is a double-chambered uterus. So a further exploration was made. The os being largely dilated, two fingers were introduced into the uterine cavity, and the organ pushed well down by the hand upon the abdomen. The edge of a septum was felt about 1 inch above the internal os, and a finger made to pass upward, one on either side of it, each into a separate cavity, and thus was demonstrated the presence of the malformation known as uterus bilocularis. The right cavity, into which ovum developed, was much larger than the left; the walls were thicker and the surface more irregular. If any decidua had formed in the left cavity, it was never seen.

The patient had borne a healthy child three years previous to this abortion. She made a good recovery. She promised to call at my office as soon as she was able to be about, but went to her home in a distant city two weeks after the abortion; so I did not see her after she left the bed. The cause of the abortion is unknown. She had safely passed through pregnancy and delivery three years previously.

It might be hastily attributed to the insertion of the placenta upon the septum, yet study shows this is the only instance of abortion occurring in the seven cases of uterus subseptus in the list. It is, however, a fact worthy of notice that of the three patients who died during or after labor, in two the form of malformation was uterus subseptus (uterus bilocularis unicorporeus).

In a former paper¹ the writer presented a table showing the number of women pregnant, with some features of their subsequent histories. The table was correct so far as it went, but did not include his collection of cases reported in his first paper, and he did not discover until he began writing the present paper that this omission so materially affected the proper estimate of the rate of mortality of child-bearing women having such malformation of uterus. That table shows

¹ Journal American Medical Association, March 16, 1889.

that of twenty-six child-bearing women, seven died in consequence of pregnancy and labor. This gave a death rate of 26.9 per cent. Three died of hæmorrhage, two of peritonitis, one of collapse, one of eclampsia. We wish to add to this list nine cases included in a former article, and the one reported in the paper to-day. In these ten cases there were sixteen pregnancies, twelve normal labors, three abortions, one artificial delivery and no deaths.

This addition to the table very much lessens our estimate of the dangers to the life of the woman having uterus bilocularis. Now we can approximately estimate the rate of mortality as 19.4 per cent. This addition, and this correction, strikingly shows the little scientific value of conclusions drawn from a small number of cases or from incomplete reports. The writer is strongly inclined to doubt the statement made in some of our text books, that a decidua is cast off and expelled from the unimpregnated chamber of the uterus at labor or shortly afterward. He is positive it did not occur in the first one of his cases and thinks it did not in the second one, for nothing answering the appearance of a decidua was seen by the attendants who were instructed to look for it. Very few reporters mention the existence of a decidua.

Considering all the facts it does not seem reasonable a decidua should develop to the extent of becoming ripe and of being cast off. That the first steps toward the formation of the decidua are taken is quite probable, but the complete development of the decidua vera and of the decidua reflexa is dependent upon the presence of the ovum. The site of that body determines the activity of the processes leading to their perfect development. Separate a part of the uterine cavity from this stimulating influence, and if we reason from analogy we must conclude the growth ceases.

Again, one must observe that the nutritive changes taking place in the unimpregnated horn are much less marked and in some instances are not at all similar to those occurring in the pregnant horn. This is perhaps more apparent in the bicornute uterus, but has been quite frequently demonstrated in the uterus bilocularis. The unimpregnated chamber of the uterus may, and sometimes does, take on menstrual activity even during the growth of the fetus in its fellow.

Ross' case, reported in the American reprint of the London *Lancet* for November 1871, demonstrates this possibility. The patient miscarried between the fifth and sixth month. She informed the doctor there was another child in her womb, so Dr. Ross introduced his hand into the cavity and found it empty, though by palpation the uterus seemed quite large. Three months later this woman gave birth to a living child, and the bilocular condition of the uterus was then demonstrated. Between the miscar-

riage and the birth of the child the woman menstruated three times in a perfectly normal manner. This patient was seen and the diagnosis verified by Dr. Hall, of Brighton. It has been shown by repeated observations that sometimes the opposite sides of the uterus alternate in the performance of the menstrual function, and it is probable here may be found an explanation of the occurrence of menstruation in some women during pregnancy. No doubt in some of these instances there is a double uterus, one half is pregnant the other half menstruates.

In no instance did hæmatometra appear in a woman who had become pregnant. Two cases in the number pregnant are recorded. One is an anatomical specimen with little history, in the other there was occlusion of one os and the formation of a hæmatometra. It was opened by trocar and the opening kept patulous by the daily passage of a sound. It may be incidentally mentioned that in the other forms of congenital malformation of the uterus these accumulations of blood in the uterus resulting from menstruation and occlusion are not infrequently found, and experience has shown that the most effective means of cure, and the least dangerous to the life of the patient is to freely incise the tumor, empty the cavity, and wash it out with antiseptic solutions.

Menstrual disorders are not found common to this malformation, neither are its subjects more liable to diseases of the reproductive organs, hence our chief interest as practitioners will be in those cases where pregnancy occurs.

Such an occurrence exposes the patient to greater dangers than does pregnancy in women having normal uteri, the chief cause of danger being hæmorrhage. Septic peritonitis under our present forms of treatment should rarely occur. The lodgement of the fetus in a chamber having no os or an invervious one is a remote possibility.

Irregular contractions of the uterus rendering labor tedious has been quite frequently observed, and the presence of a vaginal septum has in a number of instances retarded labor and necessitated operative interference. Various methods have been employed with uniformly good results. A thick vascular septum where immediate action is demanded is best served by the galvano- or thermo-cautery. The elastic ligature has been used in such a condition where haste is not imperative with good results. The thin, slightly vascular septum may be incised at once with knife or scissors. In not a few instances nature is able to overcome all obstruction either by dilating the parts or by tearing the septum before the descending head of the fetus.

A SIMPLE AND EFFECTIVE METHOD OF ANÆSTHETIZING THE PHARYNGEAL TONSIL.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

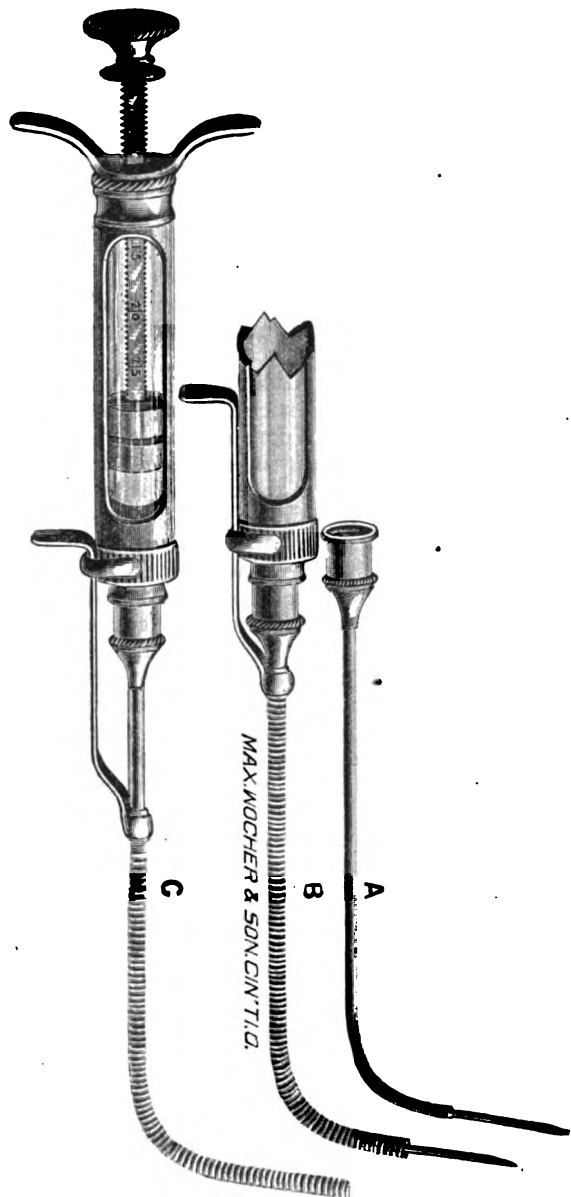
BY J. E. BOYLAN, M.D.,
OF CINCINNATI, O.

I wish to exhibit a simple instrument which, in my hands, has filled a long felt want. I am in the habit of removing hypertrophied adenoid tissue from the vault of the pharynx, with the patient in the sitting position, and without giving a general anæsthetic, to which I reluctantly resort, only in exceptional cases. In operating in this way, the greatest difficulty I had to contend with, was the very considerable pain which was invariably present, and which at times prompted the patient to refuse peremptorily a second introduction of the instrument. Local applications of cocaine, either by spraying through the nose, or worse, by means of the application of a brush to the naso-pharynx, proved most unsatisfactory; in the one case the sensitive nasal mucous membrane was chiefly affected by the cocaine; in the other, repeated introductions of the brush were usually impeded by reflex contractions of the muscles of the soft palate, and in neither was any satisfactory amount of anæsthesia produced.

In casting about for a remedy for this annoying feature, the following device suggested itself:

The instrument used consists of a very light and properly curved pharyngeal canula, to the tip of which an ordinary hypodermic needle is adjusted, and which is screwed in the usual way to the barrel of a graduated, glass, hypodermic syringe. To the posterior extremity of the barrel, finger rests are attached for greater convenience, and upon the thread of the piston rod a guard revolves, which is designed to regulate the amount of fluid injected. The canula was substituted for a less practicable, long, curved needle originally devised; when it is screwed to the syringe with the piston rod drawn, the instrument is a very handy one. With this syringe I am in the habit of injecting M. 15 of a 10 per cent. solution, or about gr. $1\frac{1}{2}$ of cocaine, into the tissue at the vault of the pharynx, before operating, and secure in this way, within five minutes, almost complete local anæsthesia. The pain of the operation, as compared with that after the application of cocaine, is almost null, an advantage which I am sure those who are in the habit of operating upon this tissue will appreciate. A further great advantage of this procedure is the ease and great celerity with which it is accomplished. The needle is readily introduced and quickly buried in the tissue in the medium line, in cases where the application of a brush or mirror is out of the question. To meet the objection which might possibly be raised, that injury might be done to

adjacent parts during introduction, I have devised a movable spiral wire guard (Fig. B), which can be slipped upon, or removed from, the canula in an instant. During introduction the guard covers the needle, as shown in Fig. C, and is slid back upon the canula with a finger of the operating hand when the injection is made. In most



instances, however, I believe this to be an unnecessary precaution, and have seldom had occasion to resort to it. Having found this method more pleasing in practice than in theory, I take great pleasure in recommending it, feeling convinced that it will give general satisfaction.

MEDICAL PROGRESS.

THE EFFECT OF FREEZING UPON IMPURITIES CONTAINED IN WATER?—The Massachusetts State Board of Health, (June, 1890,) publish experiments with seventy-six samples of water, and 336 samples of ice from fifty-eight localities, to answer the above question.

In ice from polluted sources compared with water from the same, the experiments showed: 1. That in the ice the color and salt had been removed. 2. That all but 13 per cent. of the other impurities of the water, as shown by chemical analysis, had been removed. 3. The number of bacteria in the cubic centimetre were: For *snow* (one sample) 1,246; for *clear ice* (part of the same cake as above,) 6; for *clear ice* from an unpolluted source, 0. 4. The average of 12 samples from most polluted sources, 138. The number of bacteria varied much in different parts of the same cake.

From the examinations which have been made, it appears probable that when ice first forms in the surface of a pond or river, a considerable part of the impurity in the water near the surface is entangled in the first inch or less in depth, and that the ice which forms below this first inch, contains but a very small percentage of the impurities of the water. If snow falls upon the thin ice, causing it to sink so that the water from below saturates the snow, it will freeze without purification; or if rain falls upon the snow and freezes, the ice thus formed contains the impurities of the snow and of the rain water and of whatever else may have settled out of the air. The method often pursued, of flooding the ice of a pond, or river, by cutting holes through it, gives a layer of ice as impure as the water of which it is formed.

The purifying effect of freezing is greater upon substances in solution, than upon those in suspension. This is confirmed by the fact that a large part of the organic matter, one-half or three-quarters, and sometimes more that is found in good ice, is of particles in suspension, and is readily removed by filter paper.

From the average of all of the water and ice used for ice supplies, which they have examined, they find: The organic impurities of snow ice (the sum of the ammonias,) = 69 per cent. of the impurities of the water. The organic impurities of all the ice (except snow ice,) = 12 per cent. of the impurities of the water. The organic impurities of clear ice, = 6 per cent of the impurities of the water. The *color* of waters was removed by freezing. The *salt* of the waters was nearly removed by freezing.

Of bacteria there were: 81 per cent. as many in *snow ice* as in the waters. 10 per cent. as many in *all other ice* as in the waters. 2 per cent. as many in *clear ice* as in the waters.

The results obtained lead to the conclusions: That while clear ice from polluted sources may contain so small a percentage of the impurities of the source, that it may not be regarded as injurious to the health, the snow ice, and any other, however clear, which may have been obtained by flooding, is likely to contain so large a percentage of the impurities of the source, and with these impurities, some of the disease germs which may be in the source that the Board feels bound to warn the public against using ice for domestic purposes that is obtained from a source polluted by sewage, beyond that which would be allowable in a drinking water; stream, or pond, and that in general it is much safer to use for drinking water, and for placing in contact with food, that portion of the ice that is clear.—*Public Health.*

THE TREATMENT OF TUBERCULAR ABSCESES.—BILLROTH has again made a great impression on the surgical world by an article published a few days ago. Tuberculous abscesses have long been studied and treated unsuccessfully. For the past four years Billroth has been steadily experimenting with different means of treatment till now he has reached a conclusion, which, as it is based on his enormous clinical experience, cannot fail to excite great interest. Contrary to the usual method, he cuts down upon the abscess and lays it widely open; draws off the pus and cleans out the remotest corners; follows up any fistula to its point of origin, and scrapes the lining surface of the abscess until all the so-called membrane is removed. Sometimes it is necessary to open a thigh from the popliteal space to the tuberosity, but thoroughness in regard to the fistulæ is absolutely necessary. He then waits until the bleeding has ceased, of course removing the Esmarch, if one has been used, and when the wound is glazed by the serum he fills the abscess cavity with an emulsion of 10 parts of iodoform in 100 parts of glycerine. The edges of the wound are then brought together and stitched very carefully, so as to close the cavity perfectly without an opening for drainage. Thoroughly antiseptic dressings are applied and left on for several days. In most cases he gets primary union and the abscess heals, the iodoform emulsion being slowly absorbed as granulation goes on. Sometimes when antiseptics has been imperfect sloughing results, but even then the abscess generally heals from the bottom without recurrence. In a few cases the results were not good, but in these the operation was not sufficiently thorough, as some of the recesses were left untouched. Strange as it may seem, iodoform poisoning has been noticed in only a few cases, and in a very slight degree. Billroth has used the same method in tuberculous caries with equally good results, and now asks the profession to try the method. How does the iodoform act? It is

known that iodoform is not a perfect antiseptic, but a most powerful stimulant of granulation. To use Billroth's words, "Iodoform exerts a great formative influence on the smaller vessels, and these soon begin to grow out and multiply in an extraordinary manner by constant production of offshoots and capillary loops. This energetic growth of the living tissue seems to rob the microbes of their nourishment; in the struggle for existence they succumb to the growing cells of the vessel walls." As granulations secrete pus only when diseased, drainage is unnecessary. When the method is used in caries the action is the same, the osteophytes in this case being stimulated.—Vienna Letter, *Medical News*.

THE UROLOGY OF INFLUENZA.—Under the title "Urologia de l'Influenza," M. F. CHAPPELLE *pharmacien*, read an interesting paper before the Pharmaceutical Society of Lyons, on March 1, 1890 (*Lyon Médical*, 1er Juin, 1890, Tome LXIV., Vingt-deuxième Année, page 155). According to Hayem, all influenza patients have urobilin in excess in the urine. Huchard finds in "la grippe" a constant diminution of phosphates. Fernet, on the other hand, finds an increase of both urates and phosphates. Gautrelet ascertains that in the urine of these patients there is some hyperacidity, and an increase of indican. M. Chappelle himself finds three constant facts in the urine of "la grippe"—hyperacidity, a notable excess of phosphoric acid, and richness in coloring matters (chromogens). Taking an average living weight of 60 kilograms (132 lbs.), the normal excretion of phosphoric acid in twenty-four hours is 3 grams (46 grains). In the influenzal cases the numbers were 3.67 grams, 6.80, 3.43, 4.20, 4.06, 5.11, 4.90, 4.20, 7.35, 3.67 respectively. These values prove an excessive elimination of phosphoric acid in influenza. M. Chappelle thinks that Huchard obtained his low values in consequence of the hyperacidity of the urine. In testing with uranium in a very acid medium, the final reaction with ferro-cyanide would not be complete if the experimenter had not taken care to neutralize the medium.

As to the question of chromogens, indican (which was pointed out by Gautrelet as being constantly present) was met with by Chappelle four times only among the eleven specimens examined.

As regards urobilin, influenzal urines, far from containing it in excess, are often wanting in it. Twice only did Chappelle get the characteristic green fluorescence with ammonio-chloride of zinc.

Nevertheless, all the urines examined were rich in a chromogen formerly described by Neucki and Sieber, and by them named "urorosein." This substance is revealed by a rose tint which urine assumes after from one to three minutes' contact with pure hydrochloric acid or dilute

sulphuric acid. To 50 cubic centimetres of urine are added 5 cubic centimetres of sulphuric acid of the strength of 25 per cent., and some cubic centimetres of amyl alcohol. A beautiful red color is obtained on shaking carefully. Alkalis and alkaline carbonates decolorize the solution of urorosein, acids reproduce the coloration.

A fact which is also to be noted is the presence in certain influenzal urines of a derivative of skatol conjugated with sulphuric acid; long since described by Brieger. This compound gives birth to a violet coloring matter by the reaction of the hypochlorites in hydrochloric solution. This substance, insoluble in ether, is soluble in absolute alcohol. Chappelle met with it on two occasions. In one of these two samples of urine he was absolutely able to determine, in the product of the distilled urine, skatol itself, easily recognizable by its stinking odor, and by the red needles of picrate of skatol which the ethereal solution of picric acid forms in the distilled product.—*Dublin Journal Medical Sciences*.

THE DISINFECTING POWER OF CHLORIDE OF LIME.—In the Sanitary Reports of the Marine-Hospital Service for August 8, 1890, appears a translation, from the *Centralblatt für Bakteriologie und Parasitenkunde*, of a paper on the above subject, written by E. NISSEN for the *Zeitschrift für Hygiene*:

"Contrary to the previous statement of Koch, Sternberg, and later, Jäger, found that chloride of lime possesses decided germicide power. In consequence of these contradictory results, Nissen undertook, at the suggestion of Koch, a new experimental research to decide the question.

"The result of this shows that, as a matter of fact, chloride of lime has very great disinfecting power. At first microorganisms without spores, and having comparatively little resisting power, were tested, in bouillon culture, by Esmarch's method. As chloride of lime solution gives an abundant precipitate with bouillon, the cultures were first diluted. The chloride of lime solution was added, either filtered or not filtered. The result was the same in either case.

"The bacillus of typhoid fever was destroyed in bouillon cultures, at the end of five minutes, by 0.12 per cent. of chloride of lime; the cholera bacillus and anthrax bacilli without spores, by the same proportion, usually in one minute.

"Anthrax spores of moderate resisting power (killed in three minutes by flowing steam), dried on silk threads, were destroyed in fifteen to thirty minutes by a 5 per cent. solution of chloride of lime.

"Putrid fluids and fæces were very quickly disinfected by the addition of chloride of lime. Bouillon which had become putrid was, as a rule, thoroughly sterilized in five minutes by the addition of 0.1 per cent. In diarrhoeal fæces an ad-

dition of 0.5 per cent. of chloride of lime, either in solution or as a powder, destroyed the typhoid bacillus inside of ten minutes. Nissen thinks, therefore, that chloride of lime is especially suitable for the disinfection of bed-pans."

These results correspond entirely with those previously reported by the Committee on Disinfectants of the American Public Health Association, published in 1885.

EXPERIMENTAL STUDIES IN THE ANTISEPTIC PROPERTIES OF THE ESSENCES.—CODEAC and MESMIER have fixed a scale of the antiseptic value of the essences, based on the duration of their contact with the microorganisms. In their experiments they made use of the typhus bacillus and the bacillus of glanders to establish a comparison between the action of the microbicides in ordinary use and the action of the essences.

With regard to the typhus bacillus, it is shown that the essence of cinnamon has antiseptic properties very nearly equal to those of sublimate in the proportion of 1 to 1,000. Comparison with other antiseptic agents, as, for example, boric acid, carbolic acid, sulphate of copper, and iodoform, is altogether favorable to the essences. Many essences check the development of the bacillus after a few hours or minutes, while the other antiseptic agents are effective only after the lapse of the same number of days. The antiseptic action of the several essences is graded down to those which are effective against the bacillus of typhus only after ten days' contact.

Following the same method, Codeac and Mesmier experimented with the bacillus of glanders, and proved the antiseptic action of the essences to be the same for glanders as for the bacillus of typhus. Mineral antiseptics, however, exert an influence on the microorganism of glanders superior to that which they exert on the typhus bacillus.

The experiments conducted by Codeac and Mesmier confirm those of Chamberlane, who tested the antiseptic properties of the essences in a state of vapor and in direct contact with the bacillus anthracis. The result of these investigations is that all essences possess variable antiseptic properties, and that some possess them in as high a degree as the most active chemical antiseptics, sublimate, iodoform, and sulphate of copper.

Medical antiseptics is not of recent origin. The ancients practiced disinfection, though they were ignorant of the term, and the Egyptians prevented the decomposition of bodies by the use of essences and perfumes.—*Sanitary Reports, Marine-Hospital Bureau.*

PLACENTA PRÆVIA.—At the annual meeting of the North of Ireland Branch of the British Medical Association, DR. DEMPSEY read the

notes of a case of placenta prævia which he had treated successfully by the introduction of a large piece of solid alum up against the os, and maintained in close contact with it by a vaginal tampon. He claimed for it a number of advantages: 1. It produces constriction of the uterine sinuses by hardening and contracting the uterine fibres in the lower segment of the uterus, against the outer surface of which it is in contact. 2. It appears to assist in causing thrombosis of the sinuses. 3. It produces a tenacious, mortar-like coagulation of the effused blood, which acts as an additional tampon in the vagina. 4. It does not prevent dilatation; and, 5, from the limited experience of it, it appears to obviate the necessity for the usual operative measures required in placenta prævia until the os is sufficiently dilated to permit of them with safety. In the case in point, the patient was a multipara between the seventh and eighth months of pregnancy; active hæmorrhage was going on before the introduction of the alum, yet none occurred afterwards, though the placenta was central, and dilatation had proceeded almost to the full extent. The alum had been left in for seventeen hours. Immediately after its removal violent hæmorrhage again occurred, but delivery by version was easy of accomplishment without any injury to the maternal structures. Dr. Dempsey also showed a most interesting specimen of placenta prævia, where abortion had taken place at the fifth month of gestation, and which had been treated by the same method as the above. The placenta was centrally attached over the os in this case also, and the breech presented; but, owing to the very extensive uterine attachment of the placenta, the fœtus was born enclosed within the placenta. Only a very small portion of the amniotic membrane could be seen on one side of the fœtus, like a small window in the placenta. The fundal part of the placenta was the thickest, and the funis was attached to this portion.—*Brit. Med. Journal.*

CREOLIN IN ERYSIPELAS AND ECZEMA.—DR. C. G. ROTH (Memorabilien, July, 1880) calls attention to his earlier publications, in which he recommended a solution of carbolic acid and iodine in the treatment of erysipelas; while the results with these drugs were excellent in some cases, they proved irritating to the skin. Of late he has employed a paste containing about 3 per cent. of creolin, applied freely over the affected part. The application is very pleasant, and the subjective sensations are "cooling." Results have been excellent, not only in erysipelas, in which the application was rapidly followed by a decrease in inflammation, but also in acute eczema. In chronic eczema with formation of crusts and thickening of the skin, nothing is to be expected from the use of the drug.

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SATURDAY, AUGUST 23, 1890.

THE FAILURE OF OREXIN AS A STOMACHIC.

Our attention was first called to the use of orexin by the paper of PROFESSOR F. PENZOLDT in the *Therapeutische Monatshefte*, for February, 1890. The term was applied to the hydrochlorate of phenyldihydrochinazolin ($C_{12}H_{13}N_2HCl$) on account of its supposed properties as an appetizer and digestive. It is a whitish powder, having a bitter, burning taste; and, used experimentally on animals, was toxic only in large doses, and had no escharotic action on the mucous membrane of the conjunctiva, stomach, or subcutaneous cellular tissue. In man, a dose of $7\frac{1}{2}$ grains produced a good appetite; and it was ascertained, by examinations with the stomach tube of test meals during their digestion, that $3\frac{3}{4}$ grains of the drug reduced the digestive period of wheat bread half an hour, and of beef-steak by thirty to thirty-eight minutes. With $7\frac{1}{2}$ grains, the digestive period of bread was reduced by three-quarters of an hour, and of beefsteak by one hour.

Therapeutically it was employed to relieve anorexia consequent upon surgical operations, and in tuberculosis, chlorosis, and heart affections. In nineteen of thirty-six cases there was marked improvement, eight cases were benefited, three cases were moderately improved, and six cases were not improved. The dose was $7\frac{1}{2}$ grains, three times a day, given in capsules and followed by a cup of meat broth or warm water. A detailed history of each case treated was given.

Naturally so important an addition to therapeutics was not neglected, and in the *Prager*

Medicinische Wochenschrift for March, DR. GLÜCK-ZIEGEL reported seventeen cases in which he had used orexin, in doses smaller than those used by Penzoldt, but without obtaining any improvement of the appetite or digestion. Somewhat later IMREDDY reported, in the *Pharmaceutische Post*, several cases in which he had employed orexin, in the same dose as Penzoldt, not only without any resultant improvement in the appetite, but even with consequent nausea in a few cases. Lastly MARTIUS, in the *Deutscher Medicinische Wochenschrift*, reported that in twenty-nine cases, the appetite was slightly improved in five while no effect was produced in the balance of the cases. And in the five cases that improved the same result was obtained by using pills of marshmallow similar in size to those of orexin. In order to exclude the influence of imagination in prompting a favorable report Martius did not let his patients learn the result he expected to obtain with orexin. Verbally we have heard of similar failures to obtain beneficial results from the drug, by observers in this country.

No observer, therefore, has corroborated Penzoldt's successful results that were possibly consequent upon the patient's desire to have an appetite. While it would be very desirable to have such a remedy at our command, as orexin was claimed to be, we cannot regret that this drug has failed in realizing what was expected of it. From Penzoldt's "*Lehrbuch der klinischer Argniebehandlung*," we learn that 1 gram (fifteen grains) of the drug costs twenty phennig (four cents); like antipyrin it has been patented, and the manufacturers sell it in this country in small bottles, containing fifty tablets of $1\frac{1}{2}$ grains each for a dollar and a half. As this is more than seven times the value of the drug, in fifty tablets, and it is not sold at all in bulk, we are glad to show our readers, as we have practically learned ourselves, that this expensive medication is practically useless.

MEDICAL LEGISLATORS AND LEGISLATION IN FRANCE.—The medical members of the French parliament have formed an association with the view of taking joint action upon proposed medical legislation. Medicine is well represented in this body, upwards of eighty being physicians.

ELECTROCUTION SO-CALLED AND ITS LESSON.

The Excelsior State has had its sensation, and the mystery of death is still practically unsolved. The public, too, who for weeks had been keyed up to the point of highest expectation have been disappointed. To be sure, the press gave its space writers the largest liberty, and the wood-cut artists the broadest discretion, but what beside the grewsome details of a judicial death has been gained by the morbidly curious? Much more may be said in the streets about volts, and the death-dealing capacities of different electrical systems, but what profit has there been? The press, the great servitor of morals, saw fit to disobey the legal injunction of privacy, and thanks to its so-called enterprise every household in America and Europe knew the plot of the drama almost as soon as the death of the culprit was pronounced.

As medical journalists we can hardly be expected to discuss the phases of the affair, without being open to the charge of departure from a settled policy, and therefore avoid comments upon alleged bungling, and illy concealed attempts to prove that one "commercial apparatus" was more lethal than another. Nor with the so-called barbarities of the mode have we much to do,—nor with the sentimentalities which may have inspired the legislation, nor with the psychological problem offered by the prison-life of the culprit, whom posterity may endow with a unique immortality for having been the first, perhaps the only one, in all the ages to suffer, what the advocates of various modes of execution are pleased to call a "scientific martyrdom."

We suppose that until the dawn of the millennium there will be reversion to an ancient savagery, when murder was no crime—that there will be individuals, who dread the penalty rather than abhor the crime—that there will be criminals who would rather die game than penitent—that there will be enthusiastic executioners and omniscient savants, but we are optimistic enough to believe that the times are growing ripe for the appreciation of deeds that elevate and for the patronage of a daily literature that may be admitted without a demur into the home-circle. We care not how the society of the future may punish offenders against its laws, whether by the rope or by the guillotine, by the garrote or by poison, by musket or by faggot, since many of the world's

martyrs have dignified all of these modes—but we certainly do object to the raree-shows of the State under the guise of retributive examples. Let us have, if you please, life imprisonment, without hope of pardon, the mysteries of the Bridge of Sighs, and the mental torments of "The Man without a Country," but let us have no dramas, with daily rehearsals and miserable failures. The noblest of all lands have not craved euthanasia for themselves, why force it upon criminals? We advocate no cruelties and deny no mercies, but we can not divest ourselves of the idea that the phrase "court-martialed and shot" is a much more awe-inspiring deterrent from crime than the reported dying speech.

Meanwhile as a home-lesson to ourselves, let us not surrender a profession, often dignified by the world to the coming satirist, by talking to the multitude through an interview, but let us do our own proper work by striving to prolong life. We serve neither God, our country, nor ourselves by ventilating quarrels and exhibiting in safer and milder forms those very passions, which have wrought so much disaster among the less intelligent to whom the personal pronoun is the all-in-all. Amid all temptations it were well to observe the teachings of a very old code, which enjoins upon all to "have peace with one another." We neither earn nor deserve respect by bandying epithets, unless it be our aim to please the many who clamor for a little comedy to relieve the gloom of the tragedy. As was said by an eminent divine of hanging, we may put ourselves to better uses.

WRITER'S CRAMP AND ALLIED AFFECTIONS

MR. JULIUS WOLFF, writing master of Frankfurt-on-the-Main and London, writes to the *British Medical Journal*, July 19, of his special method for the treatment of neurosis of the hand. This phrase he considers to be preferable to that used more frequently, and restricted in its application to the muscular debility that befalls the penman, whereas the affection finds examples in many other occupations, as the telegraphist, the painter, the violinist, the embroiderer, the cigarmaker, and others. His method of treatment, which has been utilized by CHARCOT, NUSSBAUM, FERRIER and others, is by massage and gymnastic exercises, both of which are so devised as to prima-

rily influence the muscles and nerves of the affected part, and secondarily to act upon the psychically affected centre; that is, the morbidly disturbed will-power of the patient. This latter function of the treatment he really set in the more prominent place, and he speaks of it as the more important and essential purpose, in that he hopes thereby to moderate the morbid action, or rather, by drawing the attention from the affected part, to influence some new action of the mind. This is the only secret of his treatment, the untiring and intelligent efforts to practice his material means in strengthening exercises, and at the same time direct the patient's attention to a neutral field. Mr. Wolff has the theory that occupational cramp does not occur in the cases of persons who are not hyperæsthetic neuropathics, which view he is able to substantiate by numerous instances in which there has been a nervous hyperæsthesia apart from, superadded to or transferred from the hand to other members. In some instances he has seen the trouble migrate from the right to the left side. In one case, he has observed synchronous movements in the right great toe and in the right thumb when the patient essayed to write. The success of the treatment largely depends upon the ability of the operator to win the confidence and secure the diligent coöperation of the patient. When he is able to secure this assistance, the prognosis is favorable, and a permanent cure may be expected. But the permanence of the cure depends entirely upon a use of gymnastic exercises, even after the operator has discontinued the treatment by massage. Cases of relapse are not impossible, but they have not occurred, in the experience of Mr. Wolff, where the patient has been faithful in the use of the prescribed gymnastic exercises.

EDITORIAL NOTES.

PAPERS MISLAID.—We regret exceedingly that the package which contained the papers presented in the Medical Section at Nashville, in some unaccountable manner, has gone astray. It has often been the custom for Secretaries of Sections to retain the papers for a few days, and as soon as they were properly arranged to forward them to *THE JOURNAL*. For a time it was supposed that these were thus held. But later correspondence reveals the fact that they were arranged by

the Secretary at the time, and left for delivery at Nashville. A most diligent correspondence and searching has failed thus far to discover them. It is our hope that the package may still be recovered. In the meantime, we have corresponded with each of the writers of papers, and in most cases will be able to secure duplicate copies for publication.

We deem this explanation due both to writers and to readers, thus giving the reason why the Section on Medicine has not been duly represented, in the papers already published.

HONORARY PRESIDENTS.—The following were made Honorary Presidents at the Medical Congress in Berlin: For the United States, John S. Billings, M.D.; Austria, Professor Billroth; England, Dr. Stokes; France, Professor Bouchard; Italy, Dr. Bacelli; Germany, Carl Theodore, Duke of Bavaria.

CANVASSERS FOR THE JOURNAL.—If members of the Association will bring to the attention of medical students the fact that a liberal commission will be paid for the securing of new subscribers to *THE JOURNAL*, it may in many instances be helpful to those who are striving to obtain a medical education. In almost any prominent locality an enterprising canvasser could secure subscriptions which would well compensate for the effort. Correspondence invited. Address "JOURNAL AMERICAN MEDICAL ASSOCIATION, 68 Wash Ave., Chicago, Ill."

THE ADVANCE OF CHOLERA.—The latest reports, August 17, announce that on August 16 there were thirty-four deaths from cholera in Mecca, eighteen in Cairo and one in Madrid. Traveling with the moving throngs of benighted pilgrims and unrestrained by sanitary cordons, we may well anticipate the further spread of this disease along the maritime routes of the Mediterranean and the Red seas. France and Italy are commendable in their exertions to prevent its incursions, but with what measure of success it yet remains to be seen.

THE ESTIMATE OF THE BERLIN MEDICAL CONGRESS.—The general verdict we believe will be favorable. The attendance has been much larger than was anticipated, and more or less inconvenience was the result. The heat during the days of session was excessive, and added to the

discomfort. The arrangement of rooms was such as to render the presentation of papers at times difficult, and the want of attention to papers not presented in the German language was a matter of criticism. These were minor considerations and should hardly enter into the estimate of results. The meeting, face to face, of such a body of notable men, must create an abiding inspiration to more extended and better work, and we are confident that the result more valuable than all others will be found in the writings of these men. We believe that the consensus of opinion as held by medical men in 1890 will be found in the forthcoming volume of Transactions.

CLOSING OF THE MEDICAL CONGRESS.—In the cable dispatches of the *N. Y. Medical Record*, we have a brief outline of the closing exercises of the Berlin Congress. Prof. Virchow, in his farewell address, expressed the hope that members would carry with them the conviction that Germany was great in peaceful pursuits—that in science there was no division of races or religions. He thanked the Imperial authorities of his country for the interest they had manifested in the welfare of the Congress, and expressed his hope to greet again his fellow-members three years hence in Rome. Brief addresses and parting words of friendly import were offered by the various foreign representatives. Dr. Billings, on the part of the American delegates, expressed their thanks for the courtesies which they had received.

THE OBJECT OF MEDICAL ASSOCIATIONS.—A brief synopsis of the address of Professor Virchow at the opening of the Medical Congress is given by cable to the *Medical News*, in which he states the value of international meetings to be that of uniting the medical world in the struggle against disease and death, and that the object of medical associations should not be to get more pay and shorter hours, but to increase our ability for research, and to diminish the dangers that surround humanity.

INTERNATIONAL MEDICAL CONGRESS.—In response to the addresses of welcome at the Berlin Medical Congress, Surgeon-General Hamilton, of the Marine-Hospital Service of the United States, said:

Mr. President and Colleagues:—The pleasant duty of responding, on behalf of the American delegates, to the gracious welcome extended to us, has been assigned to

me. America is grateful for the generous attendance at the last Congress, and I assure you that she takes a deep interest in the success of this Congress—a success now assured by reason of the Herculean labors of the Secretary-General, Dr. Lassar—she has taken an unusually deep interest, because of the respect and admiration her physicians feel for the profound learning and social graces of the physicians of the Old World, and particularly of our present hosts.

We came to see and appreciate your greatness; I say this in all sincerity, for the United States, the product of a single century, does not expect or pretend to equal in the fine arts and sciences the product of all antecedent time as represented here. Having seen, we agree that "the half has not been told us."

Here are gathered in council many of the men whose books we have read, we may see the rooms in which they teach, speak to them face to face, and we will carry to our homes and lecture rooms the most pleasant and delightful recollection of Berlin and Germany.

We also join in congratulations with our confrères of other countries, that we have as President one whose fame has been truly international for more than a quarter of a century; whose supremacy in pathological medicine is recognized in every country inhabited by civilized man. Happy the German medical profession in possessing a Virchow, and thrice fortunate the Congress over which he presides!

In the International flower garden the delicate floweret newly arrived, glistening in the morning sun, naturally takes a more retired place than the full blown rose, and so the relative infrequency of American names on the program is natural evidence that our delegates prefer to hear your mature reflections, rather put forward our own.

In the name of my colleagues I again thank you for this gracious and hospitable welcome.

The United States was given the precedence in the order of speaking, on account of the last Congress having been held in America.

THE memory of the late Miss Alice Fisher, the originator and for many years the head nurse of the Training School for Nurses at the Philadelphia Hospital, has been publicly honored, in the erection of a brass tablet at that institution. The unveiling took place June 16.

A REPRESENTATIVE MEETING.—We doubt if in the world's history there has been another so remarkable assemblage of illustrious men as was convened in the Congress at Berlin. Over five thousand delegates were present, of whom one-half were foreigners. It is idle to enumerate the list of eminent living men that were present. The nations were ably represented by those whose names are familiar to the profession the world over. In due time, the real benefit of this gathering will be apparent, as the papers they presented shall be given to the press.

TOPICS OF THE WEEK.

LATIN, ITS USES AND EDUCATIONAL VALUE.

The subject of the preliminary education of medical students, quite as much commands the serious consideration of medical men in Europe as it does in America.

At the Fifty-Eighth Annual Meeting of the British Medical Association held at Birmingham July 29, the President, Dr. Willoughby Francis Wade, in concluding his address, made the following reference to Latin and its educational value.

"Let us see then what the uses are to which a medical man does actually put his knowledge of Latin.

"1. He writes in his prescriptions the Latin names of drugs instead of their English or Anglicised ones.

"2. He writes in Latin his instructions to the dispenser for compounding the drugs so ordered.

"He writes in Latin his instructions to the patient as to the quantities in, and the times at which medicines are to be taken, or as to the manner applications are to be used. These are the only uses to which he puts his costly knowledge. It must also be allowed that he can, if he is so disposed, read easy pages from *Celsus*.

"Now, I submit to you that the necessity for doing the three former things is of a purely arbitrary and artificial character. And, further, that the necessity, such as it is, has already crumbled, and continues to crumble. I will give reasons for this allegation. As to writing the names of drugs in Latin: In accordance with the Medical Act of Parliament, the General Medical Council publishes a *Pharmacopœia*—our sole legal authority for the drugs we use. In this *Pharmacopœia* the Latin names are given, it is true, but all the English names are also given. As to writing in Latin our instructions to the dispenser: All directions to the compounder are, in the *British Pharmacopœia*, written in English, of which no Latin version is given. The Conjoint Board goes even further. If you refer to the 'Synopsis indicating the Range of Subjects in the Examination on Materia Medica and Pharmacy' published by this body, you will find all the drugs specified are called by their English names only; no Latin synonyms at all. For example, we find 'silver nitrate' not 'argenti nitras'; 'Acids—hydrochloric, nitric'—etc., not 'acidum hydrochloricum,' etc., and so on through the whole list of nearly two pages. The General Medical Council at their late session received from the Royal College of Physicians a list of proposed additions to the *Pharmacopœia*. That list was, I believe, in English only. So far, then, as the example of these representative bodies goes, it lends little countenance to the still customary habit of writing the two first portions of a prescription in Latin. And it seems to me that we should be equally in order if we used those English names with which the Council has authoritatively provided us. Lastly, as regards the instructions to patients how to take their medicines and use their appliances: It is common knowledge that a large and increasing number of practitioners invariably write these in English. And it is equally certain that those who do so are as often to be found in the higher grades of the profession as in any

other. I am in no way concerned to defend this innovation, having personally always followed the ancient practice. The hypothetical student of the easy bits of *Celsus* I will pass by on the other side. If you desire to state your belief in his non-existence, your literary memory will supply you with a suitable form of expression. That, from an instructional point of view, the compulsory study of Latin rests upon an artificial basis I claim to have proved.

"There remains the vital question of its educational value. At a remote period all knowledge beyond the most elementary was communicated, and communicable solely, in a dead language, and chiefly in Latin. A deeply rooted feeling, which probably originated in that period, still exists. It is that a nonclassical education is so imperfect as to be unworthy of a gentleman. Or, to use a word which has become obsolete in polite society without leaving a successor, such an education is not 'genteel.' That has but little to do with its intrinsic merits, but it lends to the maintenance of the custom the support of a stupendous inertia. There are, it must be admitted, large numbers of persons who are keenly alive to the salutary and expansive effects produced upon their own minds by the classical element in their own education. These naturally believe that such effects could have been produced by no other means. Now, it is no part of my purpose to disparage classical education. I do not despise, and I desire not to undervalue, any branch of human knowledge. We can examine no one of them without perceiving that unwearied industry, exceeding ingenuity, and many high intellectual qualities have been engaged in bringing them to their present state of perfection. All this is at least as true of classical as of any other branch of learning. Nor do I deny that such studies open up paths of literature of the highest interest, and in some respects all their own. I will grant all that may be claimed for them short of this—that there is no other course of education which can equally cultivate, strengthen, and expand all the faculties of the brain or qualities of the intellect. Whatever may be the apparent superiority of any means of education, they must be submitted to certain tests before their actual value can be decided. We have to enquire, not merely into their real value, but into their relative value. The latter is subject to the determination of two points. Is there any other system of which the educational value is equal, and of which the instructional value is superior? How far is it suitable for the class of minds upon which it is intended to impose it?

"The first question has already been dealt with so far as it concerns our present purpose. The second question I shall not answer myself. I prefer to place before you the words of one whom no one will accuse of indifference to classical acquirements. They are these: 'In my opinion, classical education is in itself the very best of all for those who have a certain tendency towards it, and those whose circumstances are such as will enable them not to be content with the merest rudiments, but who will proceed to the point at which they will realize some solid attainments. Terrible errors have undoubtedly been committed in the past—and in the past I include the days

of my own experience—in endeavoring to thrust the classics down the throats of everybody of a certain rank, quite irrespective of capacity and circumstance. I always bear this in mind . . . that the main purpose of education is to make the human mind a supple, effective, strong, available instrument for whatever purposes it may be required to be applied to.' Such is the evidence formally given before an Education Committee of the Flintshire County Council by Mr. Gladstone. On this, I propose three questions: Does the Latinity exacted from every medical student answer best to the description of 'merest rudiments' or of 'solid attainments?' Are—as regards medical students—'the terrible errors of the past' errors of the past only? Can the mind of a medical student be made as supple, effective, strong, and available an instrument for his purposes—so far as Nature has endowed him with faculties—by no education unless it includes Latin? I desire in future to give to the poorer student the greatest possible share of those advantages which are now enjoyed by the rich. Latin certainly stands in the way. He cannot have all. Which is the more important? Latin, or some other element of the rich man's more extended education? Should not, then, Latin be placed in the list of optional subjects? is one question which I should like to see discussed by the General Medical Council. But, indeed, this is not the only one. When the Council originally undertook to consider the subject of preliminary education, they would seem, judging by results, to have proposed to themselves this question: How best to secure that candidates shall have had that which commonly passes under the denomination of a public school education? For this I do not blame them. To have done otherwise would have put them into disaccord with public opinion. This no prudent body would do. However little it may owe its position to public suffrages, public opinion is the base of its operations. In thirty-two years great educational changes have come to pass in this country. I desire to see the whole question of preliminary education reopened, reinvestigated, reargued; and I will briefly state how, as it seems to me, the subject might be best dealt with.

"Let there be a Select Committee of the Council sitting with open doors. Let it take the evidence of two or three persons carefully selected from each of the following classes: public school masters, her majesty's inspectors of schools, head masters of training colleges, head masters of Board Schools. Let the primary subject of investigation be thus stated: In what way can it be best ascertained that a boy, aged 15, is of not less than average intellectual capacity? that he has for ten years been so trained as to have his intellect generally developed? The question is not what he has learned, but how he has learned it; not how much knowledge he has acquired, but whether he understands what he has acquired; not what he has thought about, but whether he has been trained to think at all.

"Inquiry as to what subjects will best serve such training, and which are the most useful in after years would, of course, follow; but if his then intellectual status is satisfactory, the boy is fit for differentiation into a

science student. As to this part of his education, an analogous inquiry with the assistance of experts in science teaching should be undertaken. It is not superfluous to observe that there are at the present moment eighty-nine independent examinations, scattered all over the world, any one of which is accepted as qualifying for registration as a medical student. It is difficult to see how, under such circumstances, the Council can exercise a proper control over preliminary education; but it must in fairness be admitted that this is a matter of great difficulty, and with more than one side.

"I have to-night stated to you facts which I believe to be accurate, and arguments which I have striven to make fair. I have thus arrived at conclusions which I believe to be reasonable; these are also before you. I do not ask you to accept them; I only ask you to reconsider them at your leisure, and to form your own opinion of their validity. But you may say, What use in so spending time? Is there any probability that, however we may desire them, any of these things will be done? My answer is this: the General Medical Council consists of a number of men, many of whom are highly distinguished, and there is no one of them to whom I would refuse the credit of being earnest, thoughtful, and conscientious. I believe them all to be sincerely desirous to regulate their actions in accordance with public medical opinion. It is for you, if you are interested in these matters, to make that opinion. If you do so, I have complete confidence that what you desire will be done in substance; the precise form is a matter of no importance.

"Should you thus secure such an investigation into the preliminary and scientific education of medical students, the results might, I feel assured they would, benefit other classes besides our own. They would tend to avert a danger which now threatens schools of all grades. This danger is that instruction may crowd out education; for indeed it is possible—*propter scientiam sciendi perdere causas*."—*Brit. Med. Journal*.

WHAT WE WANT.

What we want is the recorded observations of workers in the medical vineyard. Men who hibernate in their closets and indulge in day dreams may evolve by means of the proper equipment for scientific investigations that which is of value, but the practical worker can apply these deductions and test them in the severe school of experience; and we need just such evidence as these practical workers can give.—*Medical Mirror*.

THE NEW GERMAN PHARMACOPŒIA.

The new German Pharmacopœia, which will come into force next New Year's Day, will contain fifty drugs not included in the current work—such as antipyrin, condurango wine, gutta percha, naphthaline, naphthol, phenacetin, salol and sulphonal. For eighteen of these, formulæ are given. Fifty-eight of the drugs contained in the present pharmacopœia will not be found in the new one. One of these is quinine wine.

PRACTICAL NOTES.

THE MODES OF ADMINISTERING CARDIAC TONICS.

The therapeutics of cardiac affections has been greatly advanced recently, not only by the addition of numerous cardiac tonics to our list of remedies, but also by the acquirement of important details in the administration of the older remedies, by which their efficiency has been greatly advanced.

Gauthier, especially, has devoted himself to the study of this subject, and an analysis of his work as published in the *Wiener medizinische Blätter* of May 22, 1890, is well worthy of notice.

As is well known, the administration of digitalis in the form of powder or pill is apt to produce a vomiting or diarrhoea. The best form is that of an infusion made by macerating the digitalis leaves, and, when the time permits, it is this preparation which should always be used as the one which gives the most prolonged and intense action on the heart, and which is the most efficacious in producing diuresis. The infusion should be given in gradually decreasing doses. Digitalin is by no means a constant preparation, and it does not possess all the properties of the digitalis leaves. Nevertheless, the crystalized digitalin is of use where an extremely rapid action is desired, although ordinarily its action is too intense, and, therefore, dangerous, while its subcutaneous employment is extremely painful, and often produces abscesses.

Convallaria is also best employed in the form of an infusion, 8 to 10 parts being macerated in 1000 of water, to which syrup may be added, and administered the day in which it is made.

Convallarin, the active principle, may be employed in doses of $\frac{1}{6}$ to $\frac{3}{4}$ or $1\frac{1}{2}$ grains.

Strophanthus is best given in the tincture (the one official in the English Codex being the best) in 5-drop doses three times daily, although 10 to 20 drops may be given once or twice in the twenty-four hours in a single dose.

Adonis may be employed in the form of an infusion or decoction, or its active principle, adonidine, may be given. The infusion seems to be inconstant in its activity, and both of the watery preparations have an extremely bitter taste, which must be masked by syrup. Adonidine may be given in the quantity of from $\frac{1}{6}$ to $\frac{1}{3}$ grain in twenty-four hours. Its toxic action is ten times greater than that of digitalis. Caffeine is likewise a reliable remedy, provided it is given in sufficient dose, 15 to 30 grains being ordinarily required. This dose, should, however, not be exceeded without great care, as in larger quantities it is not free from danger.

The salts of caffeine are nearly insoluble in water, and are, therefore, not suitable for subcutaneous injections, although the double salts—

the benzoate of sodium and caffeine—is an exceedingly valuable preparation. Sparfeine may be used, either in the form of an infusion or decoction of the plant; or its active principle, sulphate of sparfeine, may be employed, the latter being especially valuable for its action on the heart in doses of from $\frac{3}{4}$ to 4 grains, while the infusion possesses marked diuretic properties.—*Therapeutic Gazette*.

ANOTHER ANTISEPTIC, LYSOL.

Dr. Gerlach, of Wiesbaden, has described the antiseptic power and advantages of lysol, which he has recently used with much success in Wiesbaden. As a bactericide, it is more powerful than carbolic acid or creolin; it is less poisonous than either of these two; and, finally, it is much cheaper than either. Lysol is not confined to use in closets, stools, washings, etc., but may be applied anywhere in the domain of medicine without any danger of poisoning or of discomfort. The active principle in lysol is the creosote. Gerlach believes that the drug will be found to be of real value, and that it will come into general use.—*Pharmaceutical Record*.

MAIRET ON THE PSYCHOLOGICAL ACTION OF CHLORALAMIDE.

The author carried out a series of observations in respect to the action of chloralamide on the heart. It is claimed for this hypnotic of recent introduction that it has no effect on the cardiac beat, comparable to that of chloral. He has satisfied himself, however, that in whatever dose it is given, large or small, the pulse-rate promptly undergoes a marked and immediate acceleration. At the same time, there is flushing of the head and face. Another observation of note is the supervision of a period of excitement after the ingestion of chloralamide.—*London Medical Recorder*.

PERCHLORIDE OF IRON IN LEUCORRHOEA.

Of all remedies for simple leucorrhœa, the old tincture of perchloride of iron is the best, combined with hyoscyamus, opium, hop or Indian hemp, when the mucous membrane is in a state of irritation. Tepid or cold water injections, cold hip baths, etc., are useful local applications, with rest, and avoidance of occupations involving prolonged standing or pedal exercise.

Sometimes tannin, zinc or alum are valuable additions to the injections. When the discharge emanates from the glands of the os uteri, local applications of belladonna and bicarbonate of potash are serviceable, two ounces of tincture and a teaspoonful of the alkali to a pint of water.—*Editorial Pharm. Era*.

SOCIETY PROCEEDINGS.

Johns Hopkins Hospital Medical Society.

Stated Meeting, February 17, 1890.

DR. WM. H. WELCH reported results of his
BACTERIOLOGICAL EXAMINATIONS OF CASES OF
ACUTE CROUPOUS PNEUMONIA,

and exhibited cultures and microscopical specimens of the microorganisms found in these cases. In all of the cases examined, ten in number, the diplococcus pneumonia was found and isolated in pure culture. This organism is probably constantly present in croupous pneumonia, and the evidence that it is the specific cause of this disease is very strong. In the cases examined by Dr. Welch, roll cultures or plate cultures were made from the affected parts of the lungs, from the spleen, from complicating lesions and frequently from the blood and other situations. Nutrient agar, glycerine agar and gelatine agar, according to Guarnieri's formula, were the media usually employed for this purpose. The growth of the pneumococcus on the last named medium is particularly luxuriant. In addition mice and rabbits were inoculated with bits of hepatized lung, with the spleen, etc. In one instance the presence of the pneumococcus would have been overlooked in consequence of the prevalence of other organisms, if the precaution had not been taken to inoculate animals with the tissues. Dr. Welch expressed the opinion that the diplococcus pneumoniae could not be said to be absent simply on the ground of negative results from cultures. This result must be controlled by the inoculation of susceptible animals. Moreover, even the failure to kill mice and rabbits by inoculation can not be considered conclusive evidence of the absence of the diplococcus pneumoniae, for this organism may be present in the human body in cases of croupous pneumonia in a form incapable of killing rabbits or even mice.

One of the most interesting and extraordinary properties of this organism is the variation in its virulence when tested upon animals. All who have experimented with cultures of the diplococcus pneumonia have called attention to its rapid loss of virulence when cultivated in artificial media. It is important to note that a progressive diminution of virulence may occur likewise in the lungs and other organs where the pneumococcus is present in cases of croupous pneumonia. In one case of croupous pneumonia dying in the stage of grey hepatization Dr. Welch found very numerous colonies of the diplococcus pneumoniae, mixed with a few colonies of the staphylococcus aureus in agar plate cultures from the consolidated lung. A rabbit inoculated with a piece of the lung died on the fifth day with extensive local reaction and large spleen. The pneumococci were abundant

near the seat of inoculation, and were found in considerable number, although fewer than usual, in the blood. Plate cultures (agar) made from the swollen spleen (after burning thoroughly the surface) of this patient showed in very large number, colonies of the pneumococcus. No other species of organism was present in these cultures from the spleen. The same pneumococcus was likewise observed in cover-glass preparations from the fresh spleen. The organism isolated from the spleen conformed in every particular as regards its morphology, its behavior in artificial culture media, its short vitality, its color-reactions to the pneumococcus found in the lung, the so-called Fraenkel-Weichselbaum pneumococcus. Nevertheless it was devoid of its customary virulence, for a mouse and a rabbit inoculated subcutaneously with a bit of the spleen survived, and mice and rabbits inoculated with pure cultures of the organism likewise survived, the only reaction being a small abscess or purulent infiltration of the tissues at the point of inoculation. In this case, therefore, the diplococcus pneumoniae was present in large numbers in the hepatized lung in a weakened state as regards its virulence, and in the spleen in a condition incapable of killing rabbits and even mice. Every grade of virulence was observed in the pneumococci found in the different cases, from the degree just described as incapable of killing mice and rabbits up to the degree in which rabbits were killed in 36 to 48 hours by an acute septicæmia. In two cases the pneumococcus did not kill rabbits but it did kill mice, so that the latter animals are more susceptible and are to be preferred for inoculating tissues in cases of croupous pneumonia. In three cases rabbits survived the inoculation for more than five days, the longest duration being twelve days. Inoculation of rabbits with exudation present in the bronchi or in the trachea sometimes caused a rapidly fatal sputum-septicæmia even when the pneumococcus present in the hepatized lung showed weakened virulence. In general the impression was obtained that the most virulent forms of pneumococci are to be found in the sputum, in the freshly hepatized lung or at the margin of an advancing pneumonia, whereas the pneumococci present in advanced stages of hepatization and in the spleen are likely to be less virulent. This progressive diminution in virulence, as tested upon animals, of the pneumococcus in the consolidated lung and other organs in cases of croupous pneumonia is surely a significant circumstance. In no instance had Dr. Welch as yet been able to isolate the pneumococcus in a state capable of producing pneumonia in dogs, although not less than 5 cc. of a bouillon culture 24 hours old (in the thermostat at 37° C.) of the pneumococcus, obtained from a rabbit dead 40 hours after inoculation, had been injected directly

into the lung. Other observers, however, had obtained positive results by this method of inoculation. Others have found pneumococci producing more rapidly fatal septicaemia in rabbits than resulted from any of the cultures obtained from the cases examined by Dr. Welch.

In six of the ten cases the diplococcus pneumoniae was found in pure culture in the hepatised lung, as determined by microscopical examination and by plate or roll agar cultures; in two cases it was present in combination with the staphylococcus pyogenes aureus; in one case, in addition to the pus staphylococci, the streptococcus pyogenes was present in considerable number; and in one case with gangrenous foci there were present, besides the diplococcus pneumoniae and the pus staphylococci, a short oval bacillus and a long slender bacillus, not developing in plate cultures (aerobic cultures). In one of the cases in which the staphylococcus pyogenes aureus was present, several small abscesses had formed in the hepatised lung. In four cases, the diplococcus pneumoniae was found in pure culture in the spleen, which in all of these instances was swollen and soft; in one case it was isolated from the kidney, and in one from the heart's blood. In all instances (five) in which the pleuritic exudate accompanying croupous pneumonia was examined by culture methods, the diplococcus pneumoniae was found in this exudate. In three cases of empyema following acute croupous pneumonia (these do not belong to the ten cases now under consideration) the diplococcus pneumoniae was found; in two in pure culture, in one in combination with staphylococcus pyogenes aureus and albus. The pneumo-bacillus of Friedländer was not found in any case.

Dr. Welch described the morphology and behavior in culture media of the diplococcus pneumoniae. He had found that a convenient way of staining the capsules was to treat the cover-glass specimens, dried and treated in the usual way, with glacial acetic acid, and then, without washing off the acid, to drop on the cover-glass aniline-oil gentian-violet, which can be allowed to drain off and can be renewed two or three times. Attention was called to broad pale rods, corresponding to empty capsules, sometimes found in the fluid of empyema following pneumonia. These may be 10-30 mm. long and 2-3 mm. broad. They stain faintly, may be entirely empty, or may contain one or more deeply stained pneumococci. They correspond to the capsular substance around rows of pneumococci, the cocci having partly or wholly disappeared.

For staining sections, Weigert's fibrin stain had given most excellent results. A method which had yielded good and quick results was to dry thin frozen sections from the fresh organs upon the slide, and then to heat them for half an hour at a temperature of 110° to 115° C. These can then

be stained like cover-glass specimens. This method is often employed in the laboratory for staining fresh tissues in general for microorganisms.

The statements of Fraenkel and others were confirmed as to the behavior of the diplococcus pneumoniae in artificial culture media, its susceptibility to slight changes in the reaction and composition of the medium, its brief vitality, etc. As already mentioned, Guarnieri's gelatine-agar medium was found to be particularly suitable.

The history of our knowledge of this organism from its discovery by Sternberg in September, 1880, up to the present time, and the results and conclusions reached by the various investigators of its relation to croupous pneumonia, were briefly reviewed. The frequent presence of the pneumococcus in the saliva of healthy persons is, upon the whole, an assistance to us in the explanation of the various factors concerned in the causation of croupous pneumonia.

Illinois Army and Navy Medical Association.

A meeting to organize a society of medical men now living in Illinois who served in the Army or Navy during the war, was held at Springfield, June 26, 1890.

DR. JOHN H. RAUCH called the meeting to order at 10 o'clock, was made temporary Chairman, and Dr. Starkweather temporary Secretary. Prayer was offered by Chaplain the Rev. Francis Springer.

The object of formation of this Association was stated, and letters read from over one hundred medical men heartily approving of same, and promising to coöperate in making the movement a success.

A committee upon permanent organization was appointed, consisting of Drs. John H. Rauch, W. J. Chenoweth, Decatur; N. B. Cole, Bloomington; H. W. Kendall, Quincy; and R. M. Lackey, Chicago.

AFTERNOON SESSION.

The report upon organization was received. The object of the Association was defined to be the promotion of social and historical purposes, and the discussion of medical subjects connected with the late war. The officers consist of one President, five Vice-Presidents, a Treasurer, a Secretary, and one member from each Congressional District. These shall constitute a historical committee.

This committee, in connection with the officers, shall constitute the executive committee.

The membership fee was placed at two dollars per year, power being given to the executive committee to increase the amount if deemed necessary.

The meetings are to be held annually, at such

times and places as may be determined by the Association, or executive committee. In regard to *eligibility*, membership was extended to (1) all reputable physicians now living in Illinois, whether in practice or not, who served in the Army or Navy during the late war, regardless of the State from which they came. (2) All who were surgeons or acting assistant surgeons, and who were with Illinois troops, and are now non-residents of the State.

This report, and purposes of organization, were discussed by Drs. Barnes, Chenoweth, Andrews, Kendall, Johnson, Agnew, Hughes, Buck, Hall, French, Kelso, Copestake, Skeer, Wilcox, and others.

Drs. E. L. Phillips, John C. Copestake and H. A. Kelso, a committee on nominations, reported, and the following were elected, officers to serve for one year :

President, Dr. H. A. Johnson, Chicago; Vice-Presidents, Drs. H. E. Barnes, Bloomington; H. W. Kendall, Quincy; Ira Brown, Milford; A. B. Agnew, Samoth; E. Gurlick, Alton; Treasurer, Dr. W. J. Chenoweth, Decatur; Secretary, Dr. J. H. Rauch, Chicago.

The day was pleasantly spent, informal discussions and reminiscences fully occupying the time. A biographical sketch of the members is proposed. One hundred and twenty-seven members are already enrolled.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Trephining of the Skull for Traumatic Cephalalgia of Ten Months' Duration—Operation for the Removal of a Tumor of the Brain—Operation on the Cranium of a Microcephalous Child—Researches on the Dynamogenic Injections with the Testicular Fluid of Animals—Treatment of Purulent Pleurisy.

At a recent meeting of the Surgical Society of Paris, Dr. Terrillon read the notes of a case of trephining the skull for traumatic cephalalgia of ten months' duration. The patient was an officer in the Hussars, who had received a violent blow upon his helmet. This caused a severe contusion, but there was no wound. A short time afterwards giddiness and pains in the head supervened. At the end of six months the pains became continuous, with exacerbations, especially localized at the upper part of the left side of the frontal bone. The patient could not sleep at night, and he began rapidly to lose flesh. Various drugs were tried, but without avail. Incisions into the integument over the painful spot were practiced, but also without result. Finally trephining was decided upon and performed by

the author. The bone was extremely thickened, probably from osteitis. The dura mater was healthy, and an incision into it showed that there was no lesion underneath. The recovery was rapid, and the pains disappeared, and up to the time of the publication of the notes there had been no recurrence of the trouble.

I may here recall a somewhat similar operation that was performed at the beginning of the year by Dr. Péan, at the Hôpital Saint Louis, though not for the same complaint. It was for the removal of a tumor of the brain. The patient had suffered from attacks of unilateral epilepsy for seven or eight years. He had been invalided from the military service for this affection. The epileptic attacks became more frequent, coma occurred, and there was visual hemiplegia. Dr. Gélinau, the private physician of the patient, was able to determine precisely the place occupied by the tumor. Taking his measurements from the external angle of the tragus, and from one tragus to the other tragus, in order to find the median line, about $4\frac{1}{2}$ centimeters behind in the triangle formed by the junction of these lines on the left side of the cranium in the neighborhood of the sinus, he determined exactly the spot in which the tumor should be found, and from the character of the epilepsy he indicated not only the convolution but the depth at which the tumor was probably situated, and its probable size. He concluded that the tumor was situated in the convolution of Rolando. Before taking any further steps, Dr. Ballet, an Agrégé of the Faculty of Paris, and Hospital Physician, was called into consultation. Dr. Ballet had marked in ink the spot for operating, when Dr. Péan removed a circle of the skull of about 3 centimetres; the dura mater was healthy. Following the advice of Dr. Ballet he incised it crucially, and found below the pia mater covered with pus, and a distended vein occupying half the wound. The pia mater, which was infiltrated and thickened, was divided and the brain incised. Dr. Péan then arrived at the tumor, which he removed by "morcellement," that is, by piecemeal, cutting into the sac and removing it piece by piece towards the periphery. The tumor being friable, he used a curette and took away even the capsule, which was formed by the brain. This tumor was of the size of a small apple. A small drainage-tube was introduced, the dura mater was sutured with catgut, and the soft parts with a hair suture, and antiseptic dressings were applied. Union by first intention was obtained without a drop of pus. During the night preceding the operation there had been thirty-seven epileptic attacks; on the night following it there were only five, and five or six days afterwards there were none. Coma and delirium disappeared towards the tenth day, the complete paralysis of the two limbs disappeared on the fifteenth day. The

limbs gradually recovered their movements, and at the end of a month the patient completely recovered consciousness, and the limbs recovered all their power of movement.

Another very interesting operation on the cranium was lately performed by Prof. Lannelongue on a microcephalous child 4 years of age. The patient, a little girl, appeared to be no more than two years of age. Her skull was only about one-third the normal size. She could not walk or stand on her legs without support. She was never seen to laugh, and nothing seemed to interest her. Dr. Lannelongue attributed the condition of the child to cerebral lesions as well as the narrowness of the cavity of the skull, and he thought that the rational indication in this case was to open the skull and thus relieve the brain from pressure, as has already been done in other abnormal cases with very encouraging results. Dr. Lannelongue therefore decided on performing craniotomy in this case. He began by making a long and narrow incision along the median line of the skull, corresponding to the sagittal suture, and extending from the frontal to the occipital suture. He then removed from the left side of the skull, which was flatter than the right side, a piece of bone measuring nine centimetres long by six millimetres wide. The dura mater was left intact and the superficial wound was reunited without drainage. Union took place by first intention. The operation was performed on May 9, and on June 15 a great change was noticed, for the child was quiet, laughed, and seemed to understand what was said to her. She could stand up unaided, and ceased crying; the trembling of the limbs also ceased. The cicatrization of the wound is complete, and the child's intellect seems to develop gradually. A short time after the above operation a similar one was performed by Dr. Lannelongue on another child, but it is as yet too early to judge of the results.

At a recent meeting of the Société de Biologie, Professor Brown-Séquard communicated a note confirming the results of his preceding researches on the dynamogenic effects of the hypodermic injections with the testicular fluid of animals, and has since discovered that this fluid has not only a rejuvenating effect, but that it possesses other therapeutical virtues. He now employs it in the form of enemata by administering from 40 to 50 grams of water in which is rubbed up two testicles of a guinea pig, from which he has obtained the best results. In support of his affirmations, the author cited a certain number of cases of cures or of ameliorations he had obtained by this treatment in the most diverse maladies, such as intermittent fevers, ataxy, hemiplegia of organic origin, insomnia, cardiac intermittence, dyspepsia, anæmia, and even leprosy. But the most remarkable case was the cure of a metrorrhagia in a woman, in whom was injected hypodermi-

cally some of the semen of her husband, who was himself a medical man. From further study of the subject, Dr. Brown-Séquard concludes that the testicular fluid has, on the nervous system, a powerful tonic effect.

It has been objected that these hypodermic injections acted only by suggestion. To which Dr. Brown-Séquard responded that he is far from denying the influence of suggestion in the affections dependent on the nervous system, and, as he had already said, that it is on the cerebro-spinal axis that the testicular fluid acts. It is not, therefore, by a simple theoretical refutation that one can combat the theory of suggestion; the hypothesis can be refuted only by experiments; these experiments have been performed, and the following observations were made: It was first remarked that, in a certain number of cases several injections should be practiced in order to obtain the desired result, as if a cumulative effect should be obtained. This first proof proved insufficient. In a patient injections of pure water, slightly colored, were practiced; in announcing to him marvellous results, no effect whatever was obtained. In the same patient, injections of testicular fluid, practiced some days later without apprising him of the change of the fluid, produced salutary effects. This proof is of great value; but the most striking demonstration of the inanity of the hypothesis of suggestion has been furnished by Dr. Mairet, of Montpellier, Dr. Mairet had injected the testicular fluid into lunatics, who, it is known, are essentially unapt for suggestion, and this was done with complete success.

At a recent meeting of the Société des Hôpitaux Dr. Bucquoy communicated some observations of the highest interest on the treatment of purulent pleurisy. They clearly show that "lavage" of the pleura after thoracotomy, and less so several and repeated lavages, have not the importance which is accorded to them. He summarized his remarks by the following precepts: To operate early, without which there will be produced thick fibrous shells which cicatrize with difficulty. To practice the operation according to the rules of antiseptic, and to apply antiseptic dressings; to introduce a large drain, permitting the easy escape of the discharges, and frequently to wash the drain to prevent its being blocked up. The cure is often very rapid, the pus becomes serous, and diminished in quantity. Eventually the tube drops out and cannot be put back into its place, and in three days after the wound is cicatrized.

A. B.

AMERICAN DERMATOLOGICAL ASSOCIATION.—The fourteenth annual meeting of this Association will be held at Richfield Springs, New York, on September 2d, 3d and 4th.

DOMESTIC CORRESPONDENCE.

The New York State Examination Act.

To the Editor.—The publication, in THE JOURNAL, of the Act establishing State medical examinations in New York, may give pertinence to comments on its principal provisions, some of which concern only the profession in the State wherein they are to be operative, while others are of interest—either as examples or warnings—to all who desire the advancement of medical education, and who seek such advancement through legislation under our peculiarly liberal system of representative government, in which every voting citizen—and, *a fortiori*, every legislator—has an inalienable right to form a conclusive opinion on all subjects, whether within or beyond the range of his information and experience.

Under such a system, and with inevitable regard to political expediency, the erection of separate examining boards from the homœopathic and eclectic sects was, perhaps, a "*conditio sine quâ non*" for the framers of the bill, who have endeavored to counteract the mistake of recognizing "schools" as founded on the single and subordinate question of drug administration, by ordaining that the same questions on other subjects shall be propounded to all candidates, from whatever "school."

A greater difficulty, however, arose in the selection of an examining board to represent the non-sectarian profession at large, and this difficulty can hardly be regarded by the readers of THE JOURNAL as satisfactorily settled by the enactment that this board shall consist "exclusively" of members of the State Medical Society. This Society, as everyone conversant with its transactions will gladly admit, contains many men of distinguished professional attainments; but since its withdrawal from affiliation with the American Medical Association by the adoption of a "new code," it can no longer, with any show of reason, claim to speak officially for the profession from which it has voluntarily separated itself, and of which, even in its own State, the majority is opposed to its tenets. According to its report for 1889, its members numbered less than 200, and none of these, in capacity of such membership alone, would be recognized by the National Association. Yet from this small circle are to be "exclusively" appointed the arbiters of questions which concern the whole profession throughout the United States.

Not only the appointment of the three "exclusive" boards of State examiners, but also the choice of the questions to be put to the candidates for a license, are functions allotted to the Board of Regents of the University of the State of New York, consisting of nineteen persons, appointed by the Legislature, who receive no salary for

their service, and who are legally required to attend but one meeting per annum. Among them are several gentlemen justly eminent in journalism, law, politics, and other vocations not connected with biological sciences; but, as far as I am informed, the only medical member of the board is a homœopathic practitioner. None of them, probably, would concede the competence of a board of physicians to control the editorial work of a newspaper, to supervise the practice of law, or to direct the management of a railway; is it quite unpardonable on our part, while admitting the excellence of their accomplishments in their respective callings, to doubt their competence to pass a final judgment upon the qualifications of physicians and surgeons? For, be it noted, after either of the medical examining boards (or "one or more members thereof") shall have reported its (or his) satisfaction with the answers given by a candidate, these answers are to be transmitted to the Regents, who, if the said candidate, "in their judgment, be duly qualified therefor," shall issue to him their license to practice medicine and surgery. Let us suppose—of course, only for the sake of argument—that a single member of, say, the eclectic examining board should be deputed to scan all the examination papers of a very incompetent candidate, and through his own ignorance or forgetfulness of physiology, surgery, pathology, and a few other subjects, or else through a laudable desire to increase the numerical influence of his peculiar "school," he should mark these papers up to ninety-nine, when their desert was near zero. Would the "judgment" of the Regents in such a case be valid as regards the mechanism of thermogenesis, the localization of cerebral or spinal lesions, the diagnosis of mediastinal tumors from aortic aneurism, the technique of ligation of the femoral artery, the histological difference between sarcomata and carcinomata, the management of impacted labor, or even the discrimination between eczema and small pox?

The worst feature of the Act—derived, perhaps, from the practice of the Civil Service Commission in other fields—is the provision that all the examinations "shall be conducted in writing;" the candidates not being in any way brought into personal relation with the nominal examining boards or with the Regents. The utter insufficiency of such a method has been too often shown to need further discussion. A first-rate examination paper in anatomy may be (and has been) written by a "book-crammer" who has never spent an hour in the dissecting-room, and who is practically worse than ignorant of the subject; and so of other branches of medical education. What we want to elicit by examination is, not the unintelligent retentiveness of a man's memory, but his ability to apply the knowledge which he has understandingly gained to varying circum-

stances; and in medicine, just as tuition is becoming more and more clinical and experimental, so examinations must necessarily follow the same course; and not only the teacher, but the examiner too, must be a master of his subject, and an analyst of character as well. The late Dr. J. C. Dalton, than whom there were few keener examiners, once said to me that, had he no other alternative, he would rather talk to a candidate for twenty minutes, without asking him a single technical question, than attempt to judge his qualifications by reading a ream of written answers, and I imagine that almost all experienced teachers will agree with him.

A singularly ungrammatical penultimate section, apparently designed to conserve the superfluous contingent emoluments of county clerks, declares that, after a graduate shall have obtained the Regents' license (which is a matter of official State registration) empowering him "to practice medicine and surgery in the State of New York," he shall not be punished "if called to attend isolated cases in another county but not residing or habitually practicing therein." Presuming that the residence and habitual practice are meant to apply to the physician, and not to the "isolated cases," it would seem that, instead of a State qualification, we shall have only a county qualification, after all, and that the *ridiculus mus* produced by the preposterous parturition of the Act will vanish through a very small hole, leaving the really important affairs in a worse condition than before the law received gubernatorial approval despite the protest of a large part of the regular profession.

ALFRED L. CARROLL, M.D.

30 West Fifty-ninth St., New York.

Letter from the Catskills.

The Secretary of the American Medical Association Climbs the Catskills, Stands on Inspiration Point, Gazes into the Depths of the Kaaterskill Falls, and gives to our readers Some thoughts on Mountain Scenery and Health Combined.

To the Editor:—I dare to offer to your readers from the lofty Catskills, and at about the highest point in the range, some thoughts on mountain scenery and health combined in place of a didactic or clinical lecture. The rare atmosphere united to the grand scenery gives one a feeling of exhilaration which lifts him above all thoughts of disease, or its concomitant mediation. Even hygiene may almost be ignored, as health here really runs itself. We are so often treated to the phrase "the Switzerland of America" that the term seems to mean nothing, but for grandeur of mountain scenery, by which humanity lapses into nothingness, this particular portion of New York surpasses everything on this continent. Few of

the hundreds of thousands of people living within a radius of 250 or 300 miles in the teeming cities of New York, Brooklyn and Philadelphia are aware of their proximity to such wonders of nature, and that within half a day's journey they could gratify their sight with a view eclipsing all that we are taught to regard as accessible only after a long and fatiguing sea voyage or railroad trip.

A walk of half a mile, from the hotel, which affords from its own porch a remarkable bird's-eye view of the valley of the Hudson, and the river of that name about eight miles away, winding its way through hundreds of thrifty towns and villages, brings us to Inspiration Point, which enables the spectator to stand on a projecting point of rock and scan the entire valley laid out like a map, shaded in varying hues of green. This point is about 2,700 feet above the level of the sea, and is reached by a circuitous road climbing the sides of the mountain from the station nearly two miles below. This station, already an elevated spot, is connected with the world below by means of a narrow gauge road ascending by a quite sharp grade. Another beautiful spot is the Kaaterskill Falls, where a pretty mountain stream after a series of jumps from one rocky ledge to others finally disappears in a basin many feet below to lose itself in a ravine, almost entirely hidden from view by a heavy growth of mountain timber.

From several points, the sun may be watched as he suddenly bursts upon the world on the dawn of a new day, or bids it farewell as he sinks to rest. Although this is the tenth year that this mountain has been opened to the world who seek for health, for scenery and the like, yet the marvellous scenes of beauty and grandeur have scarcely begun their development, and new paths, etc., are constantly being opened by the explorers. Before bidding adieu to my readers, I must urge them to come here, if but for a few days, and I feel sure they will say that I have told them little of what they will be sure to enjoy. Nor is the health and appetite built up without something substantial to aid in its maintenance. Ten thousand acres of land which surround the hotel belong to it, not only for pleasure but for the procuring of meats of all kinds, milk, butter and the other adjuncts of good living, thus assuring the mountain climbers the luxury of the best meals to assuage the pangs of appetite which are so sure to attack them at stated intervals in the midst of their explorations.

When we add to this the admirable manner in which they are served, affording so much comfort which often is lacking in the hotels of the lower world, we feel that we relieve any who may be tempted to come up here of that fear which so often attacks the hungry traveler when seated at the average hotel table. Later, opportunity may

offer to give a brief glance at some of the hygienic points to be obtained by a pilgrimage to this Mecca by those who are seeking the often phantom goddess Hygiea.

W. B. ATKINSON.

Hotel Kaaterskill, N. Y., Aug. 9, 1890.

The Heart on the Right Side—No Right Lung.

To the Editor.—Being called to one of our hotels about ten days ago to see a patient, as I was preparing to leave, a gentleman in the office asked me to feel his heart and see if I had ever seen anything like it. I found the heart to beat firmly and with unusual force against the right chest wall. I could detect no apex beat, but it seemed as if the whole side of the heart struck directly against the wall. I could detect no beat or sound on the left side. I saw clearly that he either had a displaced heart or that it was a congenital malformation. It being after tea, and having other engagements, I made no further examination, but asked him to call at my office at some convenient time to him, that I might make a thorough examination of his case.

On the morning of the 12th, at about 5:40 A.M., some five or six days after I had first seen him, I was summoned to the hotel hurriedly to see him. On my arrival found that he had died about fifteen minutes before with a pulmonary hæmorrhage. I took his name and occupation and had him carried to an undertaker's establishment where the costal cartilages were cut and the anterior chest wall turned back, and I now give the results of the autopsy:

E. F. W., æt. about 36, a commercial traveller, slender and seemed to have a delicate constitution, died about 5:45 A.M., July 12. Post-mortem showed the heart on right side of the chest. No right lung; left lung well developed but studded with tubercular deposits. The left side of the heart and the auricle natural. The right side and auricle unusually large, giving the heart a one-sided appearance. The enlarged right side evidently striking against the right chest wall at each beat. The heart, with its pericardium, being the only thing on the right side except where a portion of left lung protruded over to right of sternum. There was no part of the right lung, nor had there ever been any. It was a case of congenital malformation.

I was anxious that these specimens be preserved, but could not have it done. I report this thinking it of interest to the profession.

Drs. Cason, Rochelle, Denpree, Henderson, and perhaps others of this city examined the case very carefully also. J. A. CROOK, M.D.

Jackson, Tenn., July 15, 1890.

ASSOCIATION NEWS.

Report of the Treasurer of the Rush Monument Fund to the Forty-first Annual Meeting of the American Medical Association.

Gentlemen.—I have the honor to report the condition of the "Rush Monument Fund" as follows:

Cash received from Dr. J. M. Toner, late Treasurer, July 13, 1889	\$1,195.69
Contributed since the Newport meeting:	
Arnold, W. G., Pawtucket, R. I.	1.00
Burgdorf, Augustus, Washington, D. C.	5.00
Boston, C. H., New York City	1.00
Best, Dr. J. E., Arlington Heights, Ill.	1.00
Barker, R. W., Washington, D. C.	5.00
Bulkley, Dr. J. W., Washington, D. C.	5.00
Conant, H., Pawtucket, R. I.	5.00
Carter, Dr. C. C., Pawtucket, R. I.	5.00
Davis, Dr. Robt T., Fall River, Mass.	1.00
Dearing, Geo. T., Washington, D. C.	5.00
Fiske, Dr. S. F., Pawtucket, R. I.	2.00
Gaylord, Dr. W. G., Pawtucket, R. I.	10.00
Goff, Dr. D. L., Pawtucket, R. I.	5.00
Gardner, Dr. Geo. W., Pawtucket, R. I.	1.00
Gilman, Dr. Jno. H., Pawtucket, R. I.	1.00
Godding, Dr. W. W., Washington, D. C.	5.00
Haskell, Dr. W. H., Pawtucket, R. I.	5.00
Hill, Dr. L. G., Dover, N. H.	1.00
Jenks, Dr. S. A., Pawtucket, R. I.	5.00
Jenks, Dr. James M., Pawtucket, R. I.	10.00
Johnson, Dr. H. L. E., Washington, D. C.	5.00
Kelly, Jno. R., Washington, D. C.	5.00
Kalusowski, Washington, D. C.	2.00
Littlefield, Lt. Gov. O. G., Pawtucket, R. I.	5.00
Lee, J. Wm., Washington, D. C.	10.00
Lovejoy, Dr. J. W. H., Washington, D. C.	4.00
Lothrop, A. M., Washington, D. C.	5.00
Metcalf, Hon. H. B., Pawtucket, R. I.	5.00
McClelland, W. F. (Treas.) Denver, Col.	50.00
Mason, Dr. R. D., Pawtucket, R. I.	2.00
Morrison, E., Washington, D. C.	5.00
Moore, Wm. G., Washington, D. C.	5.00
Parks, Dr. W. A., Pawtucket, R. I.	1.00
Patterson, Dr. A. C., Washington, D. C.	5.00
Patterson, Dr. D. C., Washington, D. C.	5.00
Patterson, Dr. T. H., Chicago, Ill.	1.00
Palmer, Dr. Wm. G., Washington, D. C.	5.00
Reyburn, Dr. Robt., Washington, D. C.	5.00
Schaeffer, Dr. E. M., Washington, D. C.	1.00
Sheldon, Dr. H. H., Pawtucket, R. I.	1.00
Stearns, Hon. H. A., Pawtucket, R. I.	2.00
Sell, Dr. Ed. H. M., Allentown, Pa.	5.00
Stack, Dr. Maurice J., Washington, D. C.	5.00
Speare, W. R., Washington, D. C.	5.00
Stanton, Dr. J. O., Washington, D. C.	5.00
Sothoron, Dr. J. T., Washington, D. C.	5.00
Snow, Dr. A. P., Winthrop, Me.	2.00
Toner, Dr. J. M., Washington, D. C.	4.00
Townshend, Dr. Smith, Washington, D. C.	5.00
White, J. Harrison, Chicago, Ill.	10.00
Witmer, Dr. A. H., Washington, D. C.	5.00
Walter, Jr., Dr. J., Washington, D. C.	5.00

\$1,459.69

On a careful examination of this report it will be seen that of the \$264 contributed since the Newport meeting, \$66 were from Pawtucket, R. I., secured through the personal solicitations

of Dr. J. O. Whitney of that place, and \$132 in Washington, in response to personal appeal. I think this may be regarded as an indication of what could be done by similar work in other towns and cities throughout the country. A little effort on the part of the profession would secure the completion of the monument in 1892. Shall we not make it?

Since the above, the following sums were received at Nashville:

Armstrong, C., Carrolton, Ill.	\$1.00
Berkemeyer, L. C., Allentown, Pa.	1.00
Bishop, W. T., Harrisburg, Penn.	5.00
Baily, Wm., Louisville, Ky.	1.00
Brower, D. R., Chicago, Ill.	1.00
Bucher, J. Riley, Lebanon, Penn.	2.00
Bowen, A. B., Maquoketa, Iowa	2.00
Christmas, J. D., Allentown, Penn.	1.00
Cauley, Morris J., Allentown, Penn.	1.00
Clemens, H. S., Allentown, Penn.	1.00
Colvin, Darwin, Clyde, Ohio	1.00
Davis, J. W., Smyrna, Tenn.	1.00
Dibrell, A., Van Buren, Ark.	1.00
Erdman, J. D., Allentown, Penn.	1.00
Erdman, W. B., Allentown, Penn.	1.00
Evarts, O., College Hill, Ohio	5.00
Grim, H. A., Allentown, Penn.	1.00
Heistand, Daniel, Allentown, Penn.	1.00
Herbst, H. H., Allentown, Penn.	1.00
Hartzel, Wm. H., Allentown, Penn.	1.00
Hassler, W. A., Allentown, Penn.	1.00
Herdmon, W. H., Ann Arbor, Mich.	1.00
Kistler, A. L., Allentown, Penn.	1.00
Keller, James A., Hot Springs, Ark.	10.00
Kauffman, J. S., Blue Island, Ill.	2.00
Lear, John, Allentown, Penn.	1.00
Loving, Starling, Columbus, Ohio	1.00
Logan, S., New Orleans, La.	5.00
Lenoir, B. B., Lenoir P. O., Tenn.	1.00
Martin, E. G., Allentown, Penn.	1.00
Martin, Chas. D., Allentown, Penn.	1.00
Marten, Alfred G., Allentown, Penn.	1.00
Martin, Thos. J., Allentown, Penn.	1.00
Miller, A. D., Allentown, Penn.	1.00
McComas, J. D., Oakland, Md.	5.00
Otto, C. J., Allentown, Penn.	1.00
Richard, P. L., Allentown, Penn.	1.00
Romig, Geo. M., Allentown, Penn.	1.00
Riegel, H. H., Allentown, Penn.	1.00
Stem, P. E., Allentown, Penn.	1.00
Stilz, P. H., Allentown, Penn.	1.00
Slough, F. J., Allentown, Penn.	1.00
Schaeffer, C. D., Allentown, Penn.	1.00
Strong, C. et al, Portland, Oregon	14.00
Schenck, W. L., Osage, Kan.	1.50
Sloan, A. B., Kansas City, Mo.	1.00
Starkey, Horace, M., Chicago, Ill.	1.00
Shelden, W. K., Williamsport, Tenn.	2.00
Twitmyer, J. H., Sharpsville, Penn.	1.00
Wiggins, T. H., Litchfield, Conn.	5.00
Yeager, Norton R., Allentown, Penn.	1.00

\$97.50

Amount brought forward \$1,459.69

\$1,557.19

Disbursements as per vouchers, \$17.50

Balance cash in Bank \$1,539.69

\$1,557.19

D. C. PATTERSON,

Treasurer.

NECROLOGY.

Death of Prof. J. Adams Allen, A.M., M.D., LL.D., Dean of Rush Medical College.

Dr. J. Adams Allen, the well known physician, died at his residence, No 2001 Michigan Avenue, Chicago, after a lingering illness of nearly three years. Few men were better known in the profession, and his death, though not unexpected, will nevertheless bring a fresh sorrow to many hearts.

Jonathan Adams Allen was born in Middlebury, Vt., January 16, 1825. His maternal ancestors came from England in the Mayflower in 1620, and his paternal ancestors arrived in this country from Wales in 1634, having been driven to that country from England by the exigencies of civil war at a remote date. His ancestors on both sides were, therefore, English. Their descendant, Dr. Allen, was prepared for college at the early age of 9 years, the result of which procedure was to impair his health and superinduce symptoms of a speedy decline. He was then exiled from study temporarily, and went into the country, where special pains were taken to counteract the ill effects of premature mental application. In winter he was allowed to pursue light study, and this method being followed until he was 16, he became possessed of a sturdy physique that has stood him in good stead during his active life, and the performance of the exacting duties of his profession. In 1845 he graduated with the degree of B.A., and during December, 1846, with the degree of M.D.

In January, 1847, Dr. Allen married Miss Mary Marsh, of Kalamazoo, Mich., and the succeeding day visited his first patient. Since this first patient the recital of Dr. Allen's life would be a narration of the achievement of the highest honors in his profession—of a life of unwearied application, of indomitable perseverance, and of persistent instruction. He has occupied numerous chairs in Rush Medical College, accepting the chair of Professor of Theory and Practice of Medicine in 1859, when he came to Chicago, and holding it up to 1890, or when his sickness compelled him to resign.

As a result of his extended studies and varied investigations, the students of Rush Medical College esteem him the "versatile uncle," as he has been familiarly called by the students and alumni of the college for many years, and whose didactic discourse always remained in their memory, such was his happy faculty of imparting instruction. Every study that Dr. Allen has undertaken he has beautified by his eloquence and literary talent; in every phase of existence where in he has lived, he has been honored and esteemed as few men are. President of Rush Medical College, Grand Master of the Masons of Michigan,

Grand Commander of Knights Templar, Honorary of the Thirty-third Scottish Rite, Northern Jurisdiction; the chosen orator on occasions of celebration, successful editor and correspondent, his works live after him and will endure.

Dr. Allen has been surgeon for the Chicago, Burlington and Quincy Railway for twenty-four years. He has in his travels gained a fund of knowledge which he has treasured up in a series of journals which, if published in full, would fill several octavo volumes. He has made the tour of Europe, Egypt, and Morocco, and some few of his notes of travel have been published.

Dr. Allen leaves a son, Charles L. Allen, the lawyer, and a daughter, the wife of Charles Haines, of this city.

Christian Faye, M.D.

Dr. F. Christian Faye, of the University of Christiania, died May 5 in his eighty-fourth year. He was for many years the professor of medicine and the prime mover in many progressive movements at that university. He also enjoys the honor of having been the founder, in 1858, of the Academy of Sciences of Christiania.

MISCELLANY.

LETTERS RECEIVED.

Mr. M. J. Lawson, Dr. R. J. Dunglison, Philadelphia; Dr. A. H. Cooke, Chicago; Dr. R. T. Venemann, Troy, Ind.; Dr. B. W. Hall, Bowman, Ga.; Dr. A. Jewett, Barnard, Vt.; Dios Chemical Co., St. Louis, Mo.; J. H. Bates, Dr. J. A. Cutter, Dr. M. C. Holmes, Jerome Kidder Mfg. Co., New York; Dr. E. K. Nash, Montrose, O.; Dr. B. A. Watson, Jersey City, N. J.; Morgan Bates, Chicago; H. Soule, Ann Arbor, Mich.; Dr. Alex. Boggs, Paris, France; John Parmenter, Buffalo, N. Y.; Dr. E. Grissom, Denver, Col.; Dr. D. M. Wick, New Hartford, Ia.; Drs. M. Myers & O'Brien, Butte, Mont.; Dr. W. Wyman, Washington; Dr. L. D. Mason, Greenwich, Conn.; R. Law, Vancouver, Canada; Dr. I. S. Stone, Lincoln, Va.; Dr. L. H. Forman, West Milford, W. Va.; Dr. W. C. Townes, Chattanooga, Tenn.; Dr. E. Chenery, Boston, Mass.; Lovell Washer Co., Erie, Pa.; Dr. W. N. Pringle, Conemaugh, Pa.; Thos. F. Goode, Buffalo Lithia Springs, Va.; W. D. Kline, Nashville, Tenn.; Dr. G. V. Woolen, Indianapolis, Ind.; Kirkpatrick & Alexander, Monmouth, Ill.; Dr. F. W. Dimmitt, Oneida, Ill.; Dr. J. B. Edwards, Mauston, Wis.; Dr. S. H. Foy, Johnson City, Tenn.; Dr. J. E. Hollingsworth, Gazette, Mo.; Dr. B. J. Platte, Waterbury, Conn.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 9, 1890, to August 15, 1890.

By direction of the Secretary of War, the ordinary leave of absence granted Major James P. Kimball, Surgeon, in S. O. 152, July 1, 1890, from this office, is changed to leave of absence on surgeon's certificate of disability,

with permission to leave the Div. of the Missouri. Par. 7, S. O. 182, A. G. O., August 6, 1890.

Major Daniel G. Caldwell, Surgeon, is granted leave of absence for one month and fifteen days, to take effect about August 15, 1890. By direction of the Acting Secretary of War. Par. 1, S. O. 176, A. G. O., Washington, July 30, 1890.

By direction of the Acting Secretary of War, Capt. William Stephenson, Asst. Surgeon, now on duty at Columbus Bks., O., is assigned to temporary duty at Jefferson Bks., Mo., during the absence on leave of Major Daniel G. Caldwell, Surgeon, and will report accordingly. On the return to duty of Major Caldwell, Capt. Stephenson will rejoin his proper station. Par. 2, S. O. 176, A. G. O., Washington, July 30, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 16, 1890.

Medical Director P. S. Wales, detached from Medical Examining Board, and resume present duty at Museum of Hygiene.

P. A. Surgeon H. E. Ames, ordered as member of Medical Examining Board in addition to present duty.

P. A. Surgeon J. S. Sayre, detached from Navy Yard, New York, and to the U. S. S. "Ranger."

Asst. Surgeon J. H. North, Jr., ordered to the Navy Yard, New York.

Asst. Surgeon George H. Barber, detached from the U. S. S. receiving ship "Vermont," and to the "Pensacola."

Asst. Surgeon L. L. von Wedekind, detached from the "Pensacola," and to the "Vermont."

P. A. Surgeon E. W. Auzal, to temporary duty at Naval Academy to examine candidates.

P. A. Surgeon H. B. Fitts, detached from U. S. S. "Pinta," proceed home and wait orders.

P. A. Surgeon E. P. Stone, detached from the U. S. S. "Independence," and to the "Pinta."

Asst. Surgeon J. M. Whitfield, detached from the Monitors, and to Naval Hospital, Norfolk.

Surgeon Joseph Ayers, ordered to Naval Academy to examine candidates for admission.

Surgeon Geo. H. Bright, ordered to Naval Academy to examine candidates for admission.

Asst. Surgeon Geo. T. Smith, detached from Naval Hospital, Norfolk, and to the U. S. S. "Independence."

P. A. Surgeon S. S. White, detached from Marine, and to the Naval Rendezvous, San Francisco, Cal.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending August 12, 1890.

Surgeon H. W. Sawtelle, granted leave of absence for fifteen days. August 8, 1890.

P. A. Surgeon W. A. Wheeler, granted leave of absence for thirty days. August 5, 1890.

P. A. Surgeon D. A. Carmichael, granted leave of absence for thirty days. August 2, 1890.

P. A. Surgeon C. T. Peckham, granted leave of absence for thirty days. July 28, 1890.

P. A. Surgeon R. P. M. Ames, granted leave of absence for fourteen days. August —, 1890. To proceed to Shreveport, La., as inspector. August 5, 1890.

P. A. Surgeon P. C. Kalloch, granted leave of absence for seven days. July —, 1890.

Asst. Surgeon J. C. Perry, to proceed to Wilmington, N. C., for temporary duty. July 31, 1890.

Asst. Surgeon A. C. Smith, granted leave of absence for thirty days. August 11, 1890.

Asst. Surgeon G. B. Young, leave of absence extended twenty days on account of sickness. August 2, 1890.

Upon expiration of leave, to proceed to New Orleans, La., for temporary duty. August 8, 1890.

Asst. Surgeon W. G. Stimpson, when relieved at Buffalo, N. Y., to proceed to Norfolk, Va., for temporary duty. August 5, 1890.

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ORIGINAL ARTICLES.

PSYCHICAL RESULTS OF GYNECOLOGICAL OPERATIONS.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY I. S. STONE, M.D.,

OF LINCOLN, VA.

MEMBER VIRGINIA STATE BOARD OF MEDICAL EXAMINERS,
SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION,
FELLOW OF THE BRITISH GYNECOLOGICAL SOCIETY, ETC.

It has become quite the fashion of late, on the part of anti-surgical gynecologists and others opposed to radical measures in the treatment of the diseases of women, to make suggestive allusion to the possibility of insanity, or other grave neurosis, following operations. This paper is accordingly presented to this Section, showing, as I believe it does, the real facts as known to-day upon the question: "Do psychoses follow gynecological operations?"

The advent of Apostoli's application of electricity, has also afforded an opportune moment for the anti-surgical practitioner to renew and reinforce himself against radical treatment. The brilliant claims of Apostoli, and the still more arrogant assumption of certain followers of the gifted electrician, would lead the casual reader and observer to the supposition that hysterectomy for myoma is no longer a necessity. It is, therefore, not surprising that between the two extremes, there should be an active argument in progress, and that there should be a tendency to urge rather extreme views in support of an opinion. The most important paper upon this subject appeared in the *Medical News* of April 13, 1889, having been previously read by Dr. T. G. Thomas, before the N. Y. Academy of Medicine, April 4. The paper claims to report twenty-six cases where severe psychical results followed gynecological surgery.

In the consideration of this subject, it appears to the writer but just that we limit this inquiry to operations which affect the uterus and appendages; such operations as oöphorectomy, ovariectomy, salpingectomy and hysterectomy, including Porro's operation. To go beyond this surely

involves the danger of adding unimportant evidence for obvious reasons. Let us see how far the paper above alluded to conforms to this standard. Dr. Thomas reports six cases of grave psychosis, following gynecological surgery in his own practice. Of the six, one was an ovariectomy, one a Battey's operation, the third a trachelorrhaphy. The first was a patient of low grade of health, who was insane less than thirty-six hours, and died. Surely, this cannot have been merely insanity; there was evidently acute cerebral disease, at least as complication. The second case would appear to be a case in point, and is the only one of Thomas' six, which should be classified as possibly due to the operation. She made an excellent recovery. It is claimed that in no case could a history of heredity be obtained. In four of the six cases, *eccentricity* was observed prior to operation. Of cases noted in this interesting paper, one by Dr. Ill deserves notice. (See *Pittsburg Med. Review*, Vol. 2, 1888, p. 1.) Dr. Ill reports three cases occurring in his own practice. Case 1. Age 61. Fibro-sarcoma removed. Twenty days insane. Recovery. Case 2. Age 57. Ovarian cyst. Patient in bad mental state prior to operation. "Hopes to die under it." Both cases showed psychical symptoms immediately after removal of stitches. The second case had been tapped twenty-seven times in two years. Patient was insane only a short time. Can any one doubt the cause of insanity in this case? It would perhaps be well to have it generally known that insanity followed such temporizing as a rule. The third case was a "button hole" operation for cystitis. Patient recovered, although I claim the case as not properly classified.

Dr. Ill also briefly reports seven cases which were read before the Berlin Gynecological Society in 1887. Of these, only one operation affected the uterus, an amputation of the neck. One ovariectomy was followed by insanity, with fatal result. The remaining operations were upon the perineum, vagina and rectum. Five of these cases were seen in Dr. A. Martin's hospital, Berlin. In only one case upon the uterus or ovaries. (Reported by Czempin.) (Dr. Martin claims this case had history of prior tendency. See letter below.)

In 1888, Werth, of Kiel, read a paper before the German Gynecological Society, at Halle, in which he stated, that in three hundred operations on the female genital tract, he had in six instances observed psychical disturbances due to the operation. In two cases the operation was total extirpation of the uterus; in two, removal of the ovaries; and in two ovariectomy. One patient was violently excited before the operation. In five cases the mental disturbance took the form of melancholia, and one of mania.

In *American Jour. Obstetrics*, Jan., 1889, Fillebrown, of Hamburg, reports four cases observed by Prochownick. Case 1. Hysterectomy for fibromata. Patient single. Aged 45. Recovery interrupted, in the third week, by a small exudation in left side. Operation Feb. 19. Discharged well March 19. In July of the same year, melancholia. Her condition improved under treatment, but occasionally shows signs of mental distress. Shows aversion to men generally, and to physicians in particular. Case 2. Prolapsus uteri, and cystocele, with torn perineum. Operation June 16. Insanity at the end of September. Improvement in mental condition, but finally died of peritoneal cancer. Case 3. Catarrhal colitis and two abortions. Curetting of the uterus and development of ovarian cyst. Operation Sept. 19, 1889. Mental excitement in following December, increasing to mania, in a month. Slowly recovered. Had fear of cancer, and hysteria prior to operation. The fourth case. Age ——. Had eight abortions (?). Had a fibroma, which necessitated laparotomy for castration, March, 1887. Besides the ovaries, two small fibromata the size of large apples, and the tubes, with hæmato and pyosalpinx were removed. The first signs of psychical derangement occurred thirteen months after operation. The patient died, and at the autopsy, a cerebral tumor was discovered. Hæmorrhage was the immediate cause of death. Fillebrown well says that this last case of insanity was not due to the operation. He claims that if due to the operation, the psychosis should develop in four months or less. The age of two of these cases should relieve them of any suspicion of having been made insane by the surgical operations, as they were past the age of menstrual activity.

Fillebrown also reports three cases of interest, in that they developed insanity prior to operation. One rupture of ovarian cyst, just before operation was to have been performed. One week's illness. Recovery. Melancholia in two months. Recovery in three months. Another for ruptured extra-uterine pregnancy. Patient ill seven months. Melancholia in four months. Recovery. A third case, pyosalpinx, rupture, hæmorrhage, peritonitis, melancholia. History of heredity.

In the *British Medical Journal*, June 8, 1889, Dr. Thomas Keith, formerly of Edinburgh, but

now of London, makes the following remarkable observation: "Even the fact that in my cases of hysterectomy, the removal of the uterus and ovaries was sooner or later followed by insanity, in 10 per cent. of the whole number, is enough for me to condemn any operation that removes these organs." This statement occurs in the famous declaration made by Dr. Keith (in the journal above quoted), that he has forsworn such formidable operations as hysterectomy, and ovariectomy, for fibroids. Coming, as this does, from so eminent an operator, and in every way so very popular, and highly esteemed gentleman, demands careful consideration, and does not admit of mere denial.

It is not surprising that our anti-surgical friends should take advantage of this statement, and we accordingly have seen it used already in opposition to radical treatment. The inquiry made in regard to this view of the case, has led to very careful search of the literature of the subject, and to my gratification, it is almost impossible to find upon record a well-authenticated case of insanity due to these operations. In point of fact, an operation to produce insanity, which should be without question owing to the operation alone, would of necessity be performed upon a healthy woman, which no operator would dare to undertake. If this view be not correct, the solution of the difficulty lies in the neurosis being merely a coincidence or accidental result.

The investigation has led the writer from a position of some skepticism, to one of positive conviction, that the position of Dr. Keith is untenable.

For a few moments we will see what representative surgeons and others have to say in view of Dr. Keith's statement. First, let us see what he says himself: "Of the six cases of insanity I had after hysterectomy, in two, the attacks were acute, during convalescence. Both died. One had been insane before—an acute attack—none of the others. Of the other four cases, two had attacks of acute mania, within a year after operation. One recovered, the other was still insane when I last heard of her; that was several years after operation. In the other two, the — was chronic mania. . . . I had no cases of insanity after simple double removal of the ovaries; only after removal of both ovaries and the uterus. It is impossible for me not to connect at least three of the cases with the operation.

Dr. Bantock says: "I regard insanity following abdominal operations, rather as a coincidence than a consequence. I have not seen any cases, save those in which insanity was previously shown. One was a case who had been in an asylum, and the other was one of religious enthusiasm, rather than mania. The former, when last heard from, was as well as when she left the

Asylum. The latter is now quite well. Another case of supra-vaginal hysterectomy had hysterical mania for a few days, and a fourth was a bad case of ovariectomy, done during an attack of puerperal mania; the case doing well. There has been nothing in the experience of my colleagues at the Samaritan Hospital, to warrant any support to the statement in question.

Dr. A. Martin says: "I have been truly astonished to read Dr. Keith's statement. Among my own cases, out of whom over 1,000 have survived laparotomy, not one patient has been insane, where there had not been very marked symptoms of mental trouble before. Grave hysteria followed sometimes other operations, but here also not one quite healthy person has fallen ill in this way. The only exception I have seen is in rectal operations, removal of piles, and similar operations (which, indeed, I perform but quite exceptionally.) I saw acute mania, but also here there were prior symptoms, undoubtedly." This letter disposes of the statement made in Dr. Ill's paper (quoted by Thomas) that so many cases occurred in Dr. Martin's hospital.

Dr. Robert Battey says: "I rarely remove the uterus, and have not any case of insanity following operation upon any patient who was not previously insane; *per contra*, I have had a number of cases of reflex insanity which have been cured by operative interference."

Dr. T. A. Emmet says: "I have rarely done hysterectomy, and seldom remove the ovaries for any other condition than the one calling for ovariectomy proper. I have never seen, in my own practice, a case of insanity following any of these operations; nor do I know of an instance in the practice of any one else, after hysterectomy or ovariectomy. But I have known of several instances of acute mania, and a number of cases of melancholia, which have followed the operation for removing the tubes, and ovaries. I have seldom been called in consultation to see these cases, but have known from the friends of the regret [?] where I have refused to operate, and they have gone to others to have it done. Unfortunately, I am unable to furnish any statistics, and I wish our knowledge was more accurate; but I cannot divest myself of the belief, that a disturbance of the mind, in some form, has been a far more frequent occurrence after removal of the uterus and ovaries, than is generally supposed."

In the view announced by Drs. Bantock, Battey and others, that the cases of insanity following gynecological operations really preceded them, very many of our active surgeons concur; but to reproduce their opinion here would greatly lengthen this paper. In fact, there is no dissent whatever. But some may say, why do you not ask the alienists; for we have heard that many

cases of insanity are found in our asylums, as a result of gynecological work? What do we find?

Dr. Alice Bennet, of the State Asylum, Norristown, Pa., says: "I have had three cases of insanity following removal of the ovaries. I am not willing to say that the operations were the cause." These cases are cited, but develop nothing unusual. These cases came under Miss Bennet's care after operation. It will be seen that Dr. Keith only claims three cases, as unquestionably due to the operation. Dr. Keith has had sixty-four cases of hysterectomy. His six cases of psychosis show but one with previous history of insanity. It is worthy of observation that he attaches no importance to the simple removal of the ovaries for fibroids, as a factor in the production of insanity, but emphasizes the point as important "only after the removal of both organs."

Dr. G. Alder Blumer, Supt. of the N. Y. State Asylum says: "Replying to your recent inquiry in reference to gynecological operations in their relation to insanity, I have to state, that, while we have had a few cases in which such operations were assigned as the exciting cause, the patients have generally been unstable normally, and predisposed to insanity by heredity."

In conclusion, it appears but fair to claim that there is but slight evidence of insanity resulting from gynecological work. If all the factors which enter into the causation of such psychical disturbance are considered, it is quite probable that but slight evidence will be found to support the theory of cause and effect, or that insanity is directly produced by the operation. Thus we know that in any surgery we have psychical disturbances from anæsthesia, shock or use of toxic substance, such as iodoform, etc.

Again the overwhelming statistical information at hand, showing how many women are insane owing to disease of the generative organs, alone; and, also, the number cured by the proper treatment of their diseases, should forever silence any captious criticism of this surgery.

Few facts in medicine are so well established as, that scores of women are being rescued from insanity and some of the protean forms of hysteria, by the gynecologist. The fear that insanity may result from the operation should never deter the surgeon from its performance; for if in doubt about it, there must need be positive reason to suspect a mental trouble, which, according to the almost universal experience of the profession, is caused by the disease in question, and is not to be prevented by the delay of the treatment.

At the Medical Congress of Cuba Dr. Lyada read a paper on yellow fever, which disease he affirms not to have existed in Cuba before the African immigration.

A PLEA FOR EARLY LAPAROTOMY IN INTESTINAL OBSTRUCTION.

Read in the Section of Surgery at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY J. G. CARPENTER, M.D.,
OF STANFORD, KY.

●Bantock, of England, and Joseph Price, of Philadelphia, have written most beautifully, eloquently and forcibly upon this subject, "A Plea for Early Ovariectomy," and have conclusively demonstrated that the best and most favorable time for ovariectomy, is when the diagnosis is made, and before complications and structural lesions have taken place in adjacent and remote organs, and when the patient is in the best possible condition for operation. How true and applicable these remarks are to the subject of intestinal obstruction, is only correctly appreciated by the abdominal surgeon.

Surgery has made giant strides, and in no special field has there been more advance than in intestinal surgery. In every medical society there should be read a paper written on my subject, viz.: "A Plea for Early Laparotomy in Intestinal Obstruction." The mortality from delay, incorrect diagnosis, timidity, ignorance and prejudice in the past, has been very high and fearful. To-day, we have a reliable, safe, speedy and accurate method of diagnosis of intestinal obstruction, viz.: Senn's hydrogen gas inflation of the intestines and the location of the obstruction in the large or small intestine. All praise is due Senn for his inventive genius, originality, and experimental research in intestinal surgery. If intestinal obstruction is suspicioned, the permeability or non-permeability of the intestinal canal and the diagnosis of obstruction can be made in less than an hour, the hydrogen gas can be generated in ten minutes; in ten to twenty minutes, more or less, the bowels can be inflated, the gas escape from the mouth through the tube inserted in the stomach and ignited, which gives a blue flame, if no obstruction exists; otherwise, the indication, is to operate at once, and before inflammatory and structural lesions have taken place.

Keith, in speaking of the failures of abdominal surgery and hinderances to its progress, states, most of the mischief has been done by the surgeon himself. Time waits for no surgeon: "Delays are dangerous." "Procrastination is the thief of time." Formerly the phrase, obstructed bowels, was synonymous with death; to-day it means, use the test, operate, remove the cause and let the patient live. When done early, and by expert surgeons, and before structural lesions have formed, laparotomy for an intestinal obstruction will have as small a mortality as ovariectomy, or abdominal section for the removal of the uterine appendages. The physician of the

present and future who is not equipped to make the special diagnosis of obstruction, operate for its removal, or, have a surgeon operate, and before serious tissue lesions have taken place, is most certainly highly culpable and direct of duty. The best time to operate is when the diagnosis is made, and made early.

Dr. Joseph Price said he would make no delay by taxis for the reduction of strangulated hernia, but operate at once for its relief, and for the radical cure. Wyeth states, "do not wait longer than the lesion of intussusception is recognized; within the first twenty-four hours the prognosis will be more favorable, and the danger of a fatal termination will be increased with each day thereafter." If volvulus is not removed within a few hours by other treatment, abdominal section should be performed, the hand introduced and the loop untwisted. Constriction by bands, the vermiform appendix, the pedicle of an ovarian or uterine tumor, the Fallopian tube, diverticula, strangulation through slits in the omentum and mesentery and adhesions between the contiguous loops of intestines demand early operative interference, as do all other forms of intestinal obstruction. That taxis should not be done longer than five or ten minutes at any one effort, and that it may be repeated at intervals of half or one hour within the first six hours of the history of strangulation, and after twelve hours should not be practiced. The majority of cases which end fatally are those in which strangulation had existed twelve or twenty-four hours or more, and before surgical interference. Abdominal section, in a patient not exhausted by suffering or disease under asepsis and antiseptics, is almost free from danger, when done early by a surgeon skilled in the technique of intestinal and abdominal surgery.

Scientifically practiced massage and taxis have a limited range of application in the treatment of intestinal obstruction, are applicable to cases of obstruction due to a foreign body, an enterolith or fecal accumulations, and should only be resorted to before inflammatory changes have developed at the seat of obstruction and while patient is under anaesthesia.

The rule now is, not to wait hours or a day to do taxis, but do it only fifteen minutes, and never over thirty. Senn states true intestinal obstruction, whatever its cause may be, is as strictly a surgical affection as strangulated hernia, and remediable only by the same kind of surgical treatment. To let a patient die of the consequences of a removable cause of obstruction without an operation is a reflection upon the advances of modern aggressive surgery.

In doing an abdominal section for obstruction, the aim of the surgeon should be to save life, operate quickly, safely and cautiously, and not do an ideal operation, but economize time, minimize shock, lessen the stage of anaesthesia, prevent

unnecessary extrusion of bowels, and protect them with hot aseptic towels, irrigate with hot aseptic water, and prevent complications, making all the details of the operation aseptic, from beginning to end.

Insufflation of hydrogen gas is a valuable means of diagnosis in locating the seat of obstruction before tympanites has set in, and is best adapted at a time when most needed during the early stage of intestinal obstruction. If the colon dilates uniformly from the sigmoid flexure to the cæcum the obstruction must be sought higher up in the intestinal canal. The passage of gas through the ileo-cæcal valve, rendered incompetent by distention of the cæcum, is always attended by a characteristic gurgling or blowing sound, which is heard distinctly by applying the ear or stethoscope over the ileo-cæcal region. The sounds may be heard several feet away.

If the gas passes the ileo-cæcal valve, a pressure not in excess of that required to overcome it in a state of health, and if after inflation a thorough examination of the ileo-cæcal region by inspection, palpation and percussion reveals nothing abnormal, the search for the obstruction is continued by inflating the small intestines slowly, and making frequent examinations of the abdomen to ascertain the height to which inflation has been made, and to study the relative position of the different abdominal organs. Inflation is also a useful diagnostic resource in locating the obstruction during laparotomy for intestinal obstruction. The intestine below the seat of obstruction is always empty, collapsed and anæmic, as compared with the portion above the obstruction. When the obstruction is located high up in the intestinal canal, and the tympanites is extensive, the empty portion of the small intestines, has, by compression become displaced, and is often not readily found. In such cases the distention of the bowels from below will indicate to the surgeon at once the location and length of the intestine below the seat of obstruction, and will enable him to search for the obstruction from below upwards. The manipulation of the healthy intact portion of the intestinal canal in the search for the obstruction is by far a less hazardous procedure than the handling of the distended portion above the obstruction, rendered parietic, exceedingly vascular, and much softened by the obstruction. In cases where we suspect the presence of a perforation, inflation will demonstrate not only its existence, but also its location. Invagination is rare above the ileo-cæcal valve, and its location can be determined by inflation with hydrogen gas, and if resorted to early, it may prove the means of effecting reduction. In ileo-cæcal and colonic invagination slow and persistent distention of the colon with hydrogen gas, with the patient completely under the influence of chloroform, is the safest and most efficient

means of effecting reduction, and should always be resorted to whenever these conditions are recognized or even suspected.

Rectal inflation, as ordinarily practiced by forcing air into the rectum with bellows, or a Davidson's syringe, is not devoid of danger, as the force employed cannot be accurately regulated, or estimated. Insufflation of hydrogen gas from a rubber balloon is applicable in all cases of sub-acute and chronic invagination, and during the early stage of acute invagination, that is, before the passive hyperæmia in the invaginated portion has rendered reduction by this method impossible.

Should perforation take place, the accident is at once recognized by a uniform distension of the abdomen, from the entrance of the hydrogen gas into the peritoneal cavity, as well as by a sudden diminution of pressure readily felt by the person who makes compression of the balloon. The entrance of hydrogen gas into the peritoneal cavity is in itself a harmless occurrence, as the gas is non-irritant and perfectly aseptic. In such cases the insufflation must be followed at once by abdominal section and the necessary operative treatment of the invagination. (Senn.)

Senn states, intestinal obstruction irrespective of its cause is always followed by a series of consecutive pathological changes which independently of the partial or complete interruption of the passage of intestinal contents tends to destroy life.

The dilatation of the intestinal tube on proximal side of the seat of obstruction may give rise to such a degree of abdominal distension as to destroy life from suspension of important functions by mechanical pressure. In acute obstruction, the violent peristalsis on the proximal side of the occlusion causes an increased afflux of blood to the portion of bowel, the seat of exaggerated physiological function, which after cessation of peristaltic action remains in an intense venous and capillary engorgement. Hence transudation and exudation readily take place into the paravascular tissue, which combined with the capillary stasis attending this stage of the inflammatory process, often results in gangrene. The intestinal wall, in a state of inflammation, becomes permeable to pathogenic microorganisms, which after passing through the entire thickness of its wall enter the peritoneal cavity and induce septic peritonitis—a frequent immediate cause of death.

These facts are cogent reasons for adopting surgical measures in all cases of intestinal obstruction due to mechanical causes as soon as a probable diagnosis can be made. If this were done, the two greatest sources of immediate danger attending and following laparotomy, shock and septic peritonitis, if not entirely avoided, at least would be less likely to occur, and the tissues, the

seat of operation would be in a favorable condition for direct treatment.

Every physician, as a rule, on graduation appropriates to himself the prodigious title of surgeon. One may do some fair and moderately good general surgery, yet be an inferior, or bad abdominal surgeon, and unless he has had special training, practical experience, understands the technique of intestinal obstruction and prepared to meet every contingency that might arise and be master of the situation, he should not attempt the abdominal section.

In no other specialty do so many stupendous and hydra-headed complications arise, both in the obstruction and its cause. Opium, in the treatment of intestinal obstructions, should be numbered with the past. No physician has the moral or professional right to narcotize a patient, obscuring symptoms, which were they allowed to arise, would be highly indicative of surgical interference, causing his patient to sleep the sleep that knows no waking and leaves him a victim to narcosis in the valley and shadow of death.

Early diagnosis and early operation before structural lesions have occurred, when the patient is in the best possible condition for operation by a surgeon skilled in all the details of abdominal and intestinal surgery, who operates quickly, safely, expeditely, economizing time, minimizing shock, lessening the stage of anaesthesia and the protection of the viscera under aseptic precautions, little or no taxis and the technique of the operation having been so much simplified by Senn's intestinal anastomosis, lateral apposition, lateral implantation and intestinal exclusion and Senn's modification of Jobert's operation by circular enterorrhaphy will greatly lessen the mortality of intestinal obstruction in the future.

INTUBATION WITHOUT THE USE OF THE GAG OR EXTRACTOR.

Two Improvements on the Common Method, described in the Section on Surgery, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY GUIDO BELL, M.D.,
OF INDIANAPOLIS, IND.

Intubation has not as yet fulfilled the expectations of the medical profession. The relief after intubation is not so complete or so immediate as after tracheotomy; the membrane and mucus occlude the tube, and cause coughing and distress. Frequently the tube must be removed, cleansed, and again inserted. Nor has the difficulty of swallowing with the tube in the larynx as yet been overcome. Dr. W. E. Casselberry, of Chicago, two years ago recommended feeding the patient while the head is reclined downwards.

But at this time, I only wish to speak of two simplifications in the method of intubation, which render it one of the easiest of surgical procedures.

I discard both the gag and the extractor. The father or the nurse takes the child on his lap, holding firmly the little hands, as for an ordinary examination of the mouth or the throat. When the child opens its mouth, I pass the left index finger quickly into the mouth and behind the root of the tongue. Gagging follows and the larynx at once rises to the waiting finger. At this moment I put the tube in the larynx with the right hand, retaining it in place with the left index finger, withdrawing the instrument at once. This is done with such ease and quickness the child is scarcely aware of the operation, and does less resist when intubation is necessary a second time. Certainly the child will cough and make efforts to expectorate, but *gagging* is a sure sign that the tube has missed its proper place.

With an instrument in the child's mouth to hold the jaws apart, gagging is incessant, and the little one is excited and uncontrollable. Force then becomes necessary, which is manifestly dangerous in such a disease as diphtheria. But if the gagging is incited by the operator's finger, he is ready for the rising larynx, and can at once insert the tube.

There is no biting for a few seconds after the finger is thrust into the larynx; this we know from the practice of the veterinary surgeons, who thrust their pills and boluses at arm's length into the throat of the most vicious horse; the finger, however, may be protected by wrapping of adhesive plaster in front of the knuckle, as I always do.

I regard this method of intubation as the ideal operation for about 95 per cent. of all cases. By this way I have hardly ever caused any bleeding or discomfort to the child. It is done so quickly and so easily that the parents frequently express their astonishment, when told that the tube is inserted. I do not claim any special skill or training in introducing the tube into the larynx; the ease and success is all to be attributed to the method.

Occasionally the epiglottis remains adherent to the glottis; in such a case, the operator has only to raise the epiglottis from the side, causing a delay of about half a second. Or the child may be asphyxiated to such an extent that it does not gag; in that case the glottis does not meet the finger-tip, and the operator advances his finger along the anterior wall of the pharynx until the glottis is felt, and the tube is inserted.

The most common error is in introducing the finger too far behind the root of the tongue. The distance from the teeth to the larynx is from 3 to 3½ inches, according to the age.

Denhardt's gag serves an excellent purpose; nevertheless, the following advantages are apparent, and may be claimed, for my method of intubation without the gag:

1. The operator does not need an assistant.

2. The child is not excited, and does not dread a repetition of the operation.

3. The tissues of the pharynx and larynx are not injured by sudden and unexpected motions of the child. I have intubated in this way over a hundred times; it does not take me longer than three seconds. I have been successful in the first attempt—except in two or three asphyxiated cases. My last case was of that kind.

To those not accustomed to the feeling of the child's glottis, I may say that it gives the same sensation to the finger as the os uteri. If it feels smeary, we may know that the suffocation is due to membrane rather than to œdema; and so, by the touch, we get a valuable symptom for the prognosis.

The second improvement of the customary method of intubation, is in the removal of the tube by pressing it out of the larynx by grasping the larynx externally with the fingers, thus discarding the extractor entirely.

The writers on intubation, O'Dwyer, Dillon Brown, Waxham, and others, all concede that the application of the extractor is more difficult than intubation itself. Then why use an extractor at all, if it may be dispensed with? I simply squeeze the tube from without up to the fauces, and hook it from the mouth with the finger. I have done so in five cases where removal with the extractor had repeatedly failed. In one case, the neck was sore from blistering, and in another case the tube selected was too large for the larynx; nevertheless, removal did not cause much pain or discomfort.

I fasten the thread to the cheek, as in my earlier cases, I feared losing the tube—one was in the intestine ten days—and now fastening the thread has become a habit with me. Several times I have removed the tube so as to feed the patient; I do not know if this is advisable, as repeated intubation causes irritation.

In conclusion, I may say that since I have discarded the gag and extractor, intubation is easier to me than catheterization of the female bladder.

Intubation did not increase very much the percentage of recoveries in my practice. The most of the children have died; but intubation could not be blamed for that—except in one case, where the boy, 18 months old, was allowed by his mother to swallow too hastily.

I saw a case where gangrene followed diphtheria, destroying all facial muscles on one side, then the eye, and then, entering the brain, finally killed the boy.

I saw in another case, the whole parotid fall out in one piece, and recovery followed. I had a case in which two distinct places with a dull sound could be sharply circumscribed on the chest, and there I refused intubation. Three days afterward the same places were tympanitic, and strong emetics saved the girl's life. The sharply circumscribed

infiltration, and the change from the dull to the tympanitic sound, make evident the diphtheritic nature of the infiltration. In short, diphtheria in the last years showed a more malignant character in Indiana than before.

In all cases, the parents have expressed their thanks that everything had been done for the dear ones, but said that for the death we could not be responsible.

Just because we must do something in these hopeless cases, and just because we cannot promise much, therefore our doing should be very mild, and my improvements in intubation may become valuable to the practitioner.

DIAGNOSIS AND OPERATIVE TREATMENT OF GUNSHOT WOUNDS OF THE STOMACH AND INTESTINES.

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The existence of a visceral lesion of the stomach or intestines must be suspected in every case where a bullet penetrates the abdominal cavity; hence the first step in the diagnosis of gunshot injuries of these organs must be directed towards establishing the fact that penetration has occurred.

DIFFERENTIAL DIAGNOSIS BETWEEN NON-PENETRATING AND PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN.

This part of the diagnosis may be easy or difficult, according to circumstances. If the bullet has passed through the body, and the wounds of entrance and exit occupy such positions that a direct line connecting them will necessarily pass through the abdominal cavity, there can be but little doubt that both abdominal walls have been perforated at opposite points, and that the bullet has traversed that part of the peritoneal cavity interposed between them. In obese persons, the exact outlines of the peritoneal cavity cannot be located with absolute accuracy, and on this account some doubt may remain, in case two bullet wounds, made by a single bullet, are found over the anterior or lateral aspect of the pendulous abdomen, whether the peritoneal cavity between the wounds of entrance and exit falls in the track made by the bullet.

In a case of this kind that recently came under my observation, I decided this important question by injecting hydrogen gas into the wound of entrance. A glass tube corresponding to the size of the bullet was connected with the rubber tube of a rubber balloon in which the gas was stored, and was inserted into the wound of entrance; by

gently compressing the balloon the gas was forced along the track made by the bullet until it escaped at the wound of exit, which demonstrated that the wounds communicated with each other, and consequently must have been made by the same bullet. In order to show conclusively that the peritoneal cavity had not been opened at any point along the track made by the bullet, the wound of exit was closed by compression, made with self-locking hæmostatic forceps, and insufflation was resumed. After the wound had become fully distended, the resistance to the escape of gas was suddenly increased, which would not have been the case had the peritoneal cavity been opened, as in that case the gas would have escaped into the peritoneal cavity, making a free tympanites which could have been easily recognized by the usual physical symptoms. Instead of this condition, however, a circumscribed area of emphysema was caused by a continuation of the insufflation, which, with the absence of a free tympanites and the escape of gas at the wound of exit, I regarded as a positive evidence that penetration had not occurred. The wounds were not drained, but were treated and dressed in accordance with strict antiseptic precautions, and healed by first intention.

The use of the probe in such cases is of no value whatever in determining the existence or absence of penetration, and a reliance upon it as a diagnostic measure may lead to serious errors, both in diagnosis and treatment. Air should never be used for insufflating a bullet track for diagnostic purposes, as the air injected might become the direct means of infection. Hydrogen gas is a non-toxic, aseptic substance with valuable inhibitory antiseptic properties; qualities which render it the most desirable substance to be used for inflating tubular wounds for diagnostic purposes.

Wounds through the body made with a bullet, in parts of the abdomen where, from the direction of the track, it is not certain whether or not the peritoneal cavity has been opened, call for a most careful examination to determine this point. If this cannot be done satisfactorily with the hydrogen gas test, the course of the bullet must be followed by a careful dissection from the wound nearest the point where we have reason to suspect a tear or perforation of the parietal peritoneum. If only one wound, the wound of entrance, is present, the question of penetration depends upon the shape and size of the bullet, the distance from which and direction in which the shot was fired, the amount and nature of the clothing covering the point of impact, the position of the patient at the time he received the injury, and the anatomical character of the parts interposed between the wound of entrance and the abdominal cavity.

1. *Shape and Size of the Bullet.*—Other things being equal, the larger the bullet the greater the

probability of deep penetration, as in the present construction of firearms the amount of powder in the cartridge is proportionate to the weight of the bullet. A conical bullet penetrates more deeply than a round bullet of equal weight. At close range, bullets fired from firearms of the smallest calibre possess sufficient force to penetrate the soft tissues of the thickest abdominal wall. In my experiments on dogs with different sized shot, I used a double-barreled shotgun, No. 12 gauge; the cartridges were charged with the usual amount of powder used for duck hunting, and contained from four to twelve shots. The dogs were etherized, strapped on a Pasteur table and placed in an erect position, and the shooting was done at a distance of twenty feet. The largest shot, calibre 18, often passed through the body, if no bone came in its way, while even No. 8 shot invariably penetrated the anterior abdominal wall.

2. *Distance and Direction of the Bullet.*—In reference to the distance at which the shot is fired, the result will be largely influenced by the size and shape of the bullet and the quantity of powder used in the charge. A 38- or 45-calibre conical bullet propelled by the explosion of sixty to seventy grains of powder, fired at a distance of two hundred paces, will not only penetrate the abdominal cavity, but will pass through the body if its course is not impeded by the ribs, spinal column, or pelvic bones; while a round bullet of 22-calibre may fail to pass through the fleshy part of the abdominal wall at a distance of ten to twenty paces. In my experiments on the cadaver I used a 22-calibre Stephenson rifle and conical bullets. The cadaver was placed in the erect position, and the bullet was fired at a distance of twenty feet, directly in front of the subject. In every instance the bullet perforated the anterior abdominal wall, passed across the peritoneal cavity, and was found lodged at variable depths in the posterior abdominal wall.

The direction of the bullet plays an important part in the differential diagnosis between penetrating and non-penetrating wounds of the abdomen. A bullet fired in a direction which corresponds with the shortest and most direct route from the surface into the peritoneal cavity is most likely to cause a penetrating wound. Thus, bullets will enter the abdominal cavity with a minimum degree of force if in their course they pass through the thinnest portion of the abdominal wall, which corresponds with the linea alba and, notably, the umbilicus. A bullet taking a less direct route, especially if of small calibre or if fired at great distance, may become arrested in its course after passing through from two to six inches or more of soft tissues before it reaches the abdominal cavity. A bullet may reach the abdominal cavity even if the external wound be located a considerable distance from this cavity. In one of my cases, a suicide, the bullet entered the

cavity of the chest on the left side, passed through the lower lobe of the left lung, and entered the abdominal cavity through the diaphragm, where it perforated the stomach from above downwards. Perforation of the intestines may also take place in the lowest part of the abdominal cavity by the passage of a bullet through the pelvic structures, the external wound being remote from the perforation in the parietal peritoneum and the visceral lesions.

3. *Amount and Nature of Clothing at Point of Impact of Bullet.*—Many lives have been saved by thick, firm clothing breaking the force of the bullet, which then causes an ordinary, innocent flesh-wound instead of a penetrating wound, which would have been caused had the surface been less efficiently protected. In other cases the injury was modified by the bullet impinging against a button, belt, buckle, note- or pocket-book, which not only diminished the force of the missile, but changed its course from a direct route into the abdominal cavity into an oblique direction through its wall. The suicide who wants to make sure of the deadly intent upon his own life should divest himself of the clothing covering the heart, so as to remove any obstacles which might deviate or diminish the force of the bullet.

4. *Position of Patient.*—In every case of gunshot wound of the abdomen it is important to ascertain as nearly as possible the exact position of the patient at the instant the shot was fired, as information thus obtained will be of great value in determining beforehand the probable course of the bullet. It is on account of the change of the relative position of the parts after the infliction of the wound that the track made by the bullet cannot usually be followed with a probe, as by the change in the position of the muscles, and by the sliding of fascia and skin, obstructions are formed in different parts of the tubular wound. Remembering the exact position of the patient and his assailant, and imagining the direction of the bullet, its course through the tissues can be ascertained with at least an approximate degree of accuracy.

5. *Anatomical Character of Parts Interposed Between the Wound of Entrance and Abdominal Cavity.*—A conical bullet of large calibre, fired in close proximity to the body, will penetrate the tissues irrespective of their anatomical character and without deflection. Deflection of small bullets, and of large bullets fired at a considerable distance, is occasionally caused when they strike a smooth bony surface at an oblique angle, an occurrence which abruptly deviates the course of the missile. McGraw, of Detroit, has shown experimentally that deflection of bullets does not take place as often as had been formerly supposed. We have no reason to believe that the soft tissues of the abdominal wall, under any circumstances, offer sufficient resistance to change the course of

a bullet. A partially spent bullet striking obliquely against the convex surface of the ribs, or against the spinous or lateral processes of the vertebræ, or the pelvic bones, may deflect a bullet in its course, and what appears upon first sight a penetrating wound may be simply a wound of the abdominal wall, with the bullet lodged in the tissues at a considerable angle from the line of entry. Deflection should therefore be thought of as a possible occurrence only when the bullet has entered the body and has met with a bony resistance in its course towards the peritoneal cavity.

Exploration of Parietal Wound.

Examination of gunshot wounds of the abdominal wall must be made with special reference to a positive differential diagnosis between penetrating and non-penetrating wounds. The diagnostic aids which I have just enumerated should be applied in every case before any attempt is made to demonstrate the depth and course of the wound by digital or instrumental exploration. A positive diagnosis must, however, be withheld until the exact course of the bullet has been revealed by a careful exploration of the wound-canal from the point of entrance of the bullet to the peritoneal cavity, if the bullet has penetrated, or sufficiently far to prove that the abdominal cavity has not been invaded.

Certain precautions should never be neglected during the first examination of gunshot wounds of the abdomen. In the first place, undue haste must be scrupulously avoided. A wound of the abdominal wall should never be touched without first procuring for the wound of entrance and for the surface a considerable distance beyond it, a perfectly aseptic condition by thorough disinfection. The parts should be scrubbed with warm water and potash soap, and then washed with a 1-1000 solution of corrosive sublimate, or a 5 per cent. solution of carbolic acid. The surgeon's and assistants' hands should be rendered aseptic in the same manner, special care being taken to disinfect the spaces underneath the finger-nails. Digital or instrumental exploration of gunshot wounds of the abdomen without the necessary antiseptic precautions must be regarded, in the light of modern surgery, as nothing less than criminal negligence, and such recklessness may become the direct cause of a fatal wound complication in case of injuries which, if treated upon strict antiseptic principles, would have resulted in recovery. The instruments used in exploring the wound must be rendered aseptic by boiling them for at least five minutes, or by passing them through the flame of an alcohol lamp.

If a large bullet has penetrated the abdominal cavity by the shortest possible route through a thin portion of the abdominal wall, the fact that penetration has taken place often becomes evident by prolapse of the omentum into the wound-canal.

In such a case, the surgeon verifies the diagnosis by seizing the visible portion of the omentum with a pair of dissecting or hæmostatic forceps, and by making traction, pulls the omentum further into the wound for identification. The appearance of the structure, as well as the course of the blood-vessels, will enable him to decide whether the prolapsed tissue is a part of the omentum, or a piece of fat from the subperitoneal fat or the panniculus adiposus. If the part under examination proves to be the omentum, the existence of penetration has been conclusively demonstrated, and the proper treatment for penetrating wounds is at once to be carried into effect.

The cases where such a rapid differential diagnosis between non-penetrating and penetrating gunshot wounds of the abdomen can be made, are comparatively few. In the majority of cases, exploration of the wound by a careful dissection furnishes the only positive and reliable means in determining that the bullet has entered the peritoneal cavity.

Digital exploration of the wound should never be relied upon in ascertaining the depth and course of the wound, as this procedure is not infallible in making a correct diagnosis, and as, in case the bullet has penetrated the abdominal cavity, the finger may push before it and into the peritoneal cavity infected foreign substances.

The use of the probe should be discarded in the examination of gunshot wounds of the abdomen for diagnostic purposes. The wound-canal is often so tortuous from displacement of the tissues forming its walls that it cannot be followed with a probe without fear of making false passages, an occurrence which could not fail to lead to erroneous conclusions in reference to the extent and course of the wound, and in regard to the presence of visceral complications which might demand prompt operative treatment.

In every case of gunshot wound of the abdomen, the track made by the bullet must be followed by enlarging the wound by an incision at least two inches in length, which should intersect the perforation where its diameter is greatest, and in the direction of the principal muscle involved by the perforation. Before this is done all the preparations for a laparotomy should have been completed, everything required in the treatment of visceral wounds should be on hand, and the consent of the patient and his friends obtained to proceed and do what may become necessary in case it is found that the bullet has entered the abdominal cavity and has caused visceral injuries which demand surgical interference.

It is often not an easy task to follow the track of a bullet with the scalpel through a thick abdominal wall. The best method of procedure is to insert a grooved director as far as it will pass without resistance, and then divide the tissues layer after layer, catching bleeding vessels with

hæmostatic forceps as fast as they are cut, in order to keep the field of operation as nearly as possible in a bloodless condition. The bullet frequently discolours the tissues, and these discolorations are often important landmarks in following the wound. The divided tissues are held out of the way with sharp-toothed retractors, in order to enable the operator to follow the course of the bullet with his eye as well as with his instruments. When the point of the director is reached it becomes necessary to make a close inspection, and under no conditions should the knife be used until the wound-canal can again be identified and followed with the eye or the director. The dissection is to be made carefully and slowly until the opening in the parietal peritoneum is reached, which completes the first part of the diagnosis. In non-penetrating wounds the dissection is carried down to the bullet, which is then removed. In case this is not practicable on account of the location of the wound, the nature of the parts involved, or the length of the track, it is extended sufficiently far to satisfy the operator that the abdominal cavity is intact. The operation is completed by adopting the usual treatment for non-penetrating wounds. By following the methods above described in differentiating between a non-penetrating and penetrating gunshot wound of the abdomen, the surgeon is able to make a positive anatomical diagnosis, and in either case to adopt and carry into effect a rational plan of treatment.

1. Diagnosis of Visceral Wounds of the Stomach and Intestines.

Quite recently the assertion has been made by several good surgeons that laparotomy is a justifiable procedure in every case of penetrating gunshot wound of the abdomen, and the claim is made at the same time that a bullet which enters the peritoneal cavity must almost of necessity inflict visceral injuries which require direct surgical treatment. The statement must, however, be accepted as true, that in the absence of serious visceral lesions, penetrating gunshot wounds of the abdomen are injuries from which the patients are very likely to recover without operative treatment, and that when such patients are subjected to laparotomy, death may occur in consequence of the operation, and not as a result of the injury. An injury of this kind is a subcutaneous lesion which usually heals without any inflammation or suppuration, provided the bullet has not carried with it into the abdominal cavity foreign infected substances. I am firmly convinced that in most cases of spontaneous recovery after penetrating gunshot wounds of the abdomen, the favorable termination was due to the fact that the bullet did not produce any visceral lesions of the gastro-intestinal canal. In two of the six cases of gunshot wound of the abdomen which have come under my observation during the last three years—and

which will be reported further on—the absence of perforating wounds of the stomach and intestines was demonstrated by the hydrogen gas test, and both of these recovered. This appears like a large percentage, but my own experience so far has been in direct contrast with the assertions of a number of surgeons that all penetrating wounds of the abdomen require treatment by laparotomy.

Experiments on the Cadaver.

In order to throw more light on this important subject, I made a number of experiments on the cadaver to determine the frequency and number of visceral wounds of the stomach and intestines that may be expected in cases of penetrating gunshot wounds of the abdomen when the course of the bullet can be determined beforehand. These experiments I will relate very briefly.

The cadaver was suspended and placed in the erect position against a wall. The shooting was done at a distance of ten feet with a Stephenson rifle, carrying a 22-calibre conical bullet. The rifle was held on a level with the wound of entrance, so as to give to the bullet as nearly as possible an exact antero-posterior direction; that is, it was intended that the wound in the anterior abdominal wall should be on the same level as the wound in the posterior wall. As the experiments were made from one to three days after death, the abdomen was in every case somewhat distended by accumulation of gas in the intestines.

Experiment 1.—Male, fifty-four years, dead twenty-four hours, emaciated, rigor mortis well marked. Bullet entered through the linea alba, 1.8 cm. below the umbilicus. The abdomen was opened at once, and it was ascertained that the bullet had passed between the transverse colon and small intestine without causing any visceral injury, and had lodged in the posterior abdominal wall.

Experiment 2.—Male, forty-five years, dead thirty-six hours, very little emaciation. Wound of entrance 4 mm. to the right of the median line and 8.5 cm. below the umbilicus, producing in its course through the abdominal cavity one perforation on convex border of loop of small intestine, one perforation of the sigmoid flexure, and a wound in the upper portion of the bladder, which was found adherent to a loop of the ileum.

Experiment 3.—Male, thirty years, dead thirty hours, fairly well nourished. Entrance of bullet 4.5 cm. to the left of linea alba and 2 cm. below the umbilicus. Result: four perforations of the small intestine at mesenteric border, one on convex side, and one through the centre of adjoining loop.

Experiment 4.—Male, sixty years, dead eighteen hours, advanced marasmus. Bullet entered 7 cm. to the left of middle line and 1.5 cm. below the level of the umbilicus, causing three perforations in adjoining loops of intestine.

Experiment 5.—Male, forty-six years, dead twenty-four hours, greatly emaciated. Wound of entrance 5 mm. to the left of the median line and 1 cm. above the umbilicus, producing a double perforation of the transverse colon.

Experiment 6.—Male, thirty-five years, dead eight hours, well nourished, considerable tympanites. Ball entered 7.5 cm. to the right of the middle line and 15 mm. above the umbilicus, making in its course through the peritoneal cavity a marginal wound of the transverse colon.

Experiment 7.—Male, fifty-six years, dead eighteen hours, pronounced emaciation. Entrance of bullet 6 cm. to the left of linea alba, and 3 cm. above the level of the umbilicus. No visceral injuries could be found on most careful inspection of the abdominal cavity, the bullet having passed between the transverse colon and the small intestine.

Experiment 8.—Male, forty years, dead twenty-four hours, moderate emaciation. Wound of entrance 1.2 cm. to the right of median line, and 2.5 cm. below the umbilicus. Examination of the abdominal cavity showed absence of any visceral injuries that would require surgical treatment, the bullet having passed through a triangular space formed by two adjoining loops of small intestine and the transverse colon.

Experiment 9.—Male, thirty-seven years, dead thirty-seven hours; no emaciation. Bullet entered 9 mm. to the right of the median line and 2.5 cm. above the umbilicus. Liver much enlarged, and stomach dilated so that the great curvature extended below the level of the umbilicus. In searching for visceral injuries it was found that the bullet had passed through the margin of the liver close to the suspensory ligament, above the lesser curvature of the stomach, perforating at the same time the head of the pancreas.

Experiment 10.—Male, twenty-five years, dead thirty-six hours, well nourished. Wound of entrance 3.9 cm. to the left of the middle line and 9 mm. above the level of the umbilicus. The internal injuries produced consisted of one marginal wound and three double perforations of the small intestine, with two wounds of the mesentery.

Experiment 11.—Male, forty-nine years, dead thirty-two hours, moderate emaciation. Bullet entered 3 cm. to the left of the median line and 3.3 cm. above the umbilicus, passing in its course through both walls of the cardiac extremity of the stomach near the great curvature.

Experiment 12.—Male, sixty-two years, dead seventy-two hours, considerable obesity. Wound of entrance 7.5 cm. to the right of the median line and 3.1 cm. above the umbilicus, causing a wound of the right lobe of the liver and passing through the lower segment of the right kidney.

Experiment 13.—Male, forty-one years, dead twenty-three hours, extreme emaciation. Ball entered 9 mm. to the right of the median line and

3.6 cm. above the level of the umbilicus. The only internal injury found was a small wound at the very margin of the left lobe of the liver, the bullet having passed between the pyloric extremity of the stomach and the transverse colon.

Experiment 14.—Male, thirty-six years, dead twenty-eight hours, moderate emaciation. Wound of entrance 4.2 cm. to the right of the median line, and 3 mm. above the umbilicus, passing through the transverse colon.

The result of these experiments confirmed me in the opinion that I have entertained for years, that a bullet passing through the abdominal cavity does not produce visceral injuries as constantly as we have been taught to believe. It will be seen from the experiments that in four instances, experiments 1, 7, 8, and 9, the bullet passed through the abdominal cavity in an antero-posterior direction without causing any visceral injury which would require surgical interference. In experiment 13, the bullet grazed the margin of the liver, producing an insignificant wound which could not have given rise to more than trifling hæmorrhage, and which would have healed promptly without any direct treatment. In the remaining experiments where no visceral lesions were produced, the only possible indications for laparotomy would have arisen on account of hæmorrhage; but as a careful examination did not reveal the existence of injury of any vessel of sufficient size to give rise to this indication, it is only fair to assume that patients would recover from such injuries without any special surgical treatment.

If in two out of six cases, and in four out of fourteen experiments, a bullet can traverse the abdominal cavity through from wall to wall without inflicting a mortal visceral injury, it appears certainly of the greatest importance, from a practical standpoint, to draw a line of distinction in the treatment of penetrating gunshot wounds of the abdomen with and without visceral lesions. Laparotomy should not be performed simply because a bullet has entered the abdominal cavity, but its performance should be limited to the treatment of intra-abdominal lesions which, without operative interference, would tend to destroy life.

Course of Bullet.

My clinical experience and experimental work have satisfied me that the course of the bullet determines not only the existence, but also the number of visceral wounds of the gastro-intestinal canal. It may be laid down as a rule, that the shorter the route of the bullet through the abdominal cavity, the greater the possibility that the intestines will escape injury, and the fewer the number of perforations. A bullet passing through the peritoneal cavity in an antero-posterior direction will meet with fewer intestinal loops than one that is fired through the abdomen ob-

liquely or from side to side. The experiments related have demonstrated conclusively that bullets passing through the abdomen at points above the umbilicus are most likely to miss the intestines and to inflict simple penetrating wounds. On the other hand, bullet wounds in the upper segment of the abdomen most frequently inflict visceral injuries which require treatment by laparotomy for the arrest of dangerous hæmorrhage, as a wound of the liver, kidneys, or spleen gives rise to alarming and often fatal hæmorrhage. My experiments on dogs have taught me that the largest number of perforations are produced by bullets which pass from side to side, or obliquely through the abdomen at a point below the level of the umbilicus. A bullet passing through the abdominal cavity in an antero-posterior direction seldom causes more than four perforations, while fourteen and sixteen perforations are often found if it has passed transversely or obliquely through the abdomen at a point below the umbilicus.

The practical deductions to be drawn from the above remarks are that, if in any given case it can be shown from reliable information that a bullet has crossed the abdominal cavity in an antero-posterior direction at or above the umbilical level, the gastro-intestinal canal may have escaped injury, while if it is probable that the bullet has passed through the abdomen from side to side or obliquely at a point below the umbilicus, it is not only almost certain that it has injured the intestines, but it is almost equally certain that it has produced from three to sixteen perforations.

General Symptoms.

The general symptoms in cases of gunshot wounds of the abdomen, with the exception of those due to profuse internal hæmorrhage, furnish absolutely no reliable information in the differentiation between simple penetrating wounds and penetrating wounds complicated by visceral injuries.

Severe shock may attend even a non-penetrating wound, and it may be entirely absent in cases of multiple perforations. In one of my cases where I found twelve perforations, the patient walked a considerable distance immediately after he was shot, and was then transported on a wagon six miles to the hospital, and on his arrival he did not present a single symptom of shock or any other evidence of serious internal injuries.

Vomiting takes place as frequently in wounds of the abdominal wall and simple penetrating wounds as when the viscera have been injured.

Pallor is present in all gunshot wounds of the abdomen soon after the receipt of the injury, and it is only more pronounced when produced, at least in part, by sudden and severe internal hæmorrhage.

Pain is a very unreliable symptom, as it may be moderate or almost completely absent soon

after the injury has been inflicted, even when subsequently multiple perforations are found.

The pulse at first is slow and compressible in all cases of gunshot wounds of the abdomen, and nothing characteristic in its qualities is observed even if the stomach or intestines have been injured.

Hæmorrhage caused by wounds of any of the large vessels, mesentery, or any of the vascular organs, as the spleen, liver or kidneys, gives rise to progressive anæmia, small, rapid pulse, cold, clammy perspiration, dilated pupils, yawning, vomiting, and, in extreme cases, syncope and convulsions.

Local Symptoms.

The local symptoms are of no more value in determining the existence of visceral injuries in penetrating gunshot wounds of the abdomen than are the general symptoms just enumerated.

1. *Hæmorrhage.*—External hæmorrhage is slight or entirely wanting, unless an artery or vein in the abdominal wall has been injured. The bleeding from visceral wounds gives rise to accumulation of blood in the peritoneal cavity; this can be recognized by physical signs which denote the presence of fluid in the free abdominal cavity and by the general symptoms indicating progressive anæmia; increasing pallor of the face and visible mucous membranes, small, feeble pulse and dilated pupils. Gunshot wounds of the stomach are often followed by hæmorrhage into this organ and hæmatemesis. Hæmorrhage into the bowels from wounds of the intestines is seldom followed by bloody stools sufficiently early to be of any diagnostic value.

2. *Emphysema.*—Circumscribed emphysema in the tissues around the track of the bullet has been regarded as an important sign of the existence of intestinal perforation. This symptom is misleading and absolutely devoid of diagnostic value, as I have seen quite extensive emphysema of the subcutaneous tissues along the track of a bullet-wound of the abdominal wall where I was able to determine positively that the bullet did not penetrate the peritoneal cavity. It is very seldom present as the result of escape of gas when the stomach or intestines have been perforated.

3. *Free Tympanites.*—The accumulation of any considerable quantity of gas in the peritoneal cavity can be easily recognized by the disappearance of the normal liver dulness caused by the presence of gas between the surface of the liver and the chest-wall. This condition has been sought for in cases of perforating wounds of the abdomen and has been laid down as one of the symptoms which point to the existence of visceral wounds of the gastro-intestinal canal.

In the normal condition the quantity of gas contained in the intestines is so small that even if all of it should escape into the peritoneal cavity its presence in this locality could not be recog-

nized by physical signs. If we remember that only a small portion of the gaseous contents of the intestinal canal will escape even if a number of perforations exist, it is evident that this symptom should not even be taken into consideration in making a diagnosis. In more than a hundred experiments on dogs I never found enough gas in the peritoneal cavity, after penetrating gunshot wounds of the abdomen, to be recognized by physical signs, and I am confident that the same holds true in gunshot wounds of the abdominal cavity in man.

4. *Escape of Fæces.*—Escape of fæces through the bullet-wound is of exceedingly rare occurrence, and is only possible when the wound has been made with a large bullet and when the visceral wound is directly opposite the internal opening in the abdominal wall. It is met with more frequently in wounds of the large than of the small intestine. When this symptom is present, it is conclusive proof of the existence of a visceral wound of the intestines and the character of the intestinal contents will furnish some indication as to what part of the bowel has been injured.

With the exception of the last mentioned symptom, there is nothing about the local or general symptoms in cases of perforating gunshot wounds of the abdomen that would enable the surgeon to decide with any degree of positiveness whether the bullet had produced any visceral injuries of the gastro-intestinal canal, and, consequently, whether laparotomy should or should not be performed.

I think every modern surgeon will agree with me in the assertion that a perforation of any portion of the gastro-intestinal canal large enough to permit the escape of the contents of the stomach or intestines into the peritoneal cavity must be considered for all practical and medico-legal purposes a mortal injury, and that its discovery furnishes a positive indication for laparotomy. In exceptional cases, where all the conditions are favorable for such a termination, a spontaneous recovery may take place by the wounded intestine or stomach forming speedy adhesions with serious surfaces, thus protecting the peritoneal cavity against infection. One of the most important conditions for such a favorable termination to take place is that the wounded organ should be empty at the time the injury is inflicted and until the peritoneal cavity has been shut off by adhesions. These cases, however, are the exception; extravasation, septic peritonitis, and death are the rule.

If a simple penetrating wound of the abdomen is an injury from which a large majority of patients recover without exposing them to the additional risks of a laparotomy, and since bullet-wounds of the gastro-intestinal canal are attended by such an enormous mortality without oper-

ative interference, the practical value and importance of a correct diagnosis before deciding upon a definite plan of treatment becomes apparent. Hence the necessity of resorting to the use of the

Hydrogen Gas Test in the Diagnosis of Perforating Gunshot Wounds of the Abdomen.

It is apparent that if some infallible diagnostic test could be applied in cases of penetrating gunshot wounds of the abdomen, which would indicate to the surgeon the presence or absence of visceral lesions of the gastro-intestinal canal, the indications for aggressive and conservative treatment would become clear.

As we can never expect by a study of clinical symptoms, or by the ordinary physical examination to fill this gap, I was induced three years ago to search for some reliable test which in such cases should prove that the penetrating bullet had injured some portion of the gastro-intestinal canal. It occurred to me that a wound in the stomach or intestine should be sought for in some such way as the plumber locates a leak in a gas-pipe. The first object to be accomplished was to prove the permeability of the entire gastro-intestinal canal to inflation of air; and the next step was to find some innocuous gas which when inflated would escape from the intestinal wound into the peritoneal cavity, and from there through the external wound, where its presence could be demonstrated by some infallible test.

Permeability of the Ileo-Cæcal Valve to Rectal Insufflation of Air or Gas.

A great deal has been said and written in reference to the permeability of the ileo-cæcal valve to injections of fluids into the rectum, or to the insufflation of air or gases. The majority of those who have studied this subject clinically or experimentally make the positive assertion that the ileo-cæcal valve is perfectly competent and effectually guards the ileum against the entrance of both fluids and gases forced into the rectum; while others insist that it is permeable only in exceptional cases, and only a few admit that its resistance can be overcome by a moderate and safe degree of pressure. I made a number of experiments on dogs to test the resistance of the ileo-cæcal valve to rectal injections of fluids, and found that the force requisite to overcome it was so great that in every experiment where I succeeded in injecting fluid into the ileum, I found multiple longitudinal lacerations of the peritoneal surfaces of the cæcum and colon. The experiments with insufflation of air and hydrogen gas proved uniformly successful, not only in causing incompetency of the ileo-cæcal valve under a pressure which never resulted in injury to any of the intestinal tunics, but in every instance I could force the air or gas from anus to mouth. Of the many experiments which I made, I will relate only one

in illustration of the manner in which the experiments were made, and the results.¹

Experiment.—"Dog, weight thirteen pounds. Animal profoundly etherized, and air forced into the rectum through short rectal tube connected by rubber tubing with inflated rubber balloon. The distended colon could be clearly mapped out by percussion before a gurgling sound in the region of the ileo-cæcal valve indicated that the air had entered the ileum. As soon as the air commenced to distend the ileum the middle of the abdomen became prominent and tympanitic. It was found that as soon as the ileo-cæcal valve had been rendered incompetent by the gradual elastic dilatation of the cæcum, less force was required in distending the remaining portion of the gastro-intestinal canal. The inflation was carried to the extent of distending the stomach, an event which was easily recognized by a considerable prominence in the epigastric region which was tympanitic on percussion. At this time an elastic tube was inserted into the stomach, and its free end immersed under water. Bubbles of air escaped freely, and the abdominal distension was materially diminished. As the inflation was continued the air escaped through the stomach tube, showing that a moving current of air existed between the rectal and stomach tube."

The same experiment was made on the human subject with similar results, showing that in the human being the ileo-cæcal valve can be rendered incompetent by rectal insufflation of air or gas with the same ease as in the lower animals. These experiments demonstrate conclusively that in the human subject by a moderate degree of force, short of producing any injury of the tunics of the intestines, air can be forced along the entire alimentary tract, and that this procedure can be employed with perfect safety for diagnostic and therapeutic purposes in all cases where the tissues of the intestinal wall have not suffered too much loss of resistance from antecedent pathological changes.

Accurate experiments to determine the force required to render the ileo-cæcal valve incompetent by insufflation of air or gas had so far not been made, and as it was exceedingly important to obtain some accurate information on this subject, a number of experiments were made on dogs and on the human subject. In all experiments air or hydrogen gas was used. The inflation was made with a rubber balloon. The pressure was estimated either with a mercury gauge, or with a manometer, such as is used by gas-fitters and plumbers. The manometer or mercury gauge was connected by means of rubber tubing with the rectal tube on one side, and the rubber balloon on the other. The rubber balloon in which the hydrogen gas was collected held four gallons,

¹ Journal of the American Medical Association, June 23-30, 1888.

and numerous experiments showed that when the gas was forced through the opening of a stop-cock, the lumen of which was about the size of an ordinary knitting needle, a pressure upon the balloon equal to two hundred pounds (ninety kilograms) would never register more than three pounds (1.3 kilograms) of pressure to the square inch. The escape of air or gas from the rectum was prevented by an assistant pressing the margins of the anus against the rectal tube. I will give an account of only a few of the experiments to illustrate this part of our subject.

*"Experiment 15.—*Dog, weight thirty-five pounds (16 kilograms). Immediately after death the lower portion of the rectum was isolated and the rectal tube inserted and fixed in its place by tying a string firmly around the rectum. The abdomen was opened and the intestines left *in situ*. The ileum was cut transversely six inches above the ileo-cæcal valve and a glass tube inserted into the distal end, which was also tied in. Hydrogen gas was inflated from a rubber balloon. Under a pressure of three-quarters of a pound (.3 kilograms) the cæcum dilated, and a moment later the gas escaped from the gas tube and was ignited. The flame remained steady under a pressure of from one-half to three-quarters of a pound (.2 to .3 kilograms)."

*"Experiment 25.—*Dog, weight eighteen pounds (8 kilograms). Rectal insufflation of hydrogen gas, the dog being fully under the influence of ether. The colon and cæcum were only moderately distended when the gas under one-quarter of a pound (.1 kilogram) of pressure passed the ileo-cæcal valve with an audible gurgling sound. Under one pound (.4 kilogram) of pressure the abdomen became uniformly distended and tympanitic, and when an elastic tube was introduced into the stomach the escaping gas was ignited and burned with a steady flame as long as the pressure was continued."

*"Experiment 18.—*Strong, healthy young man. The subject was placed flat upon his back and hydrogen gas was forced into the rectum from a rubber balloon; at first the gas was forced in very slowly under a pressure of one and a half pounds (.6 kilogram) which distended the colon visibly as far as the cæcum. As the distension appeared to remain the same the pressure was increased to two pounds (.9 kilogram), when suddenly the indicator of the manometer receded to one pound (.4 kilogram), and the umbilical region became prominent and resonant, showing conclusively that the ileo-cæcal valve had been rendered incompetent and that the small intestine was rapidly filling with gas. As soon as the whole abdomen had become distended and tympanitic, the manometer again registered one and one-half pounds (.6 kilogram) of pressure and remained at this figure for some time after further inflation was discontinued by turning the stop-cock."

This and other experiments prove that in a normal condition the resistance of the ileo-cæcal valve to rectal insufflation of hydrogen gas in a healthy adult person is overcome under a pressure of one and one-half to two and one-quarter pounds (.6 to 1.1 kilograms). This amount of pressure is not sufficient to injure the coats of a healthy intestine, and none of the persons experimented on suffered much pain or any other immediate or remote consequences from the insufflation.

As the result of numerous observations, I may state that when the inflation is made slowly and continuously there is less danger of injuring the intestines than when it is made rapidly, or with interruptions. Slow and gradual distension of the cæcum is best adapted to overcome the competency of the ileo-cæcal valve, by gradually stretching the valve until the margins become separated. It is absolutely necessary to relax the abdominal muscles completely by placing the patient fully under the influence of an anæsthetic. A rubber balloon holding from two to four gallons (10 to 20 litres) recommends itself as the most efficient and the safest instrument for making rectal insufflation for therapeutic or diagnostic purposes.

Inflation of the Stomach.

It would be natural to expect that the alimentary canal could be inflated with more ease and with less force by following the direction of the normal peristaltic wave. That this is not the case was abundantly shown by the experiments which I made. These experiments demonstrated conclusively that it is more difficult to inflate the alimentary canal from above downwards, than from below upwards; as in the living animal I succeeded in only one instance in forcing hydrogen gas from mouth to anus, while in others an amount of force sufficient to rupture the peritoneal coat of the stomach, only effected distension of the stomach and upper portion of the intestinal canal. It is evident that great distension of the stomach constitutes an important factor in causing or aggravating intestinal obstruction, as it results in compression of the intra-abdominal organs, which may give rise to impermeability of the intestines, or may aggravate conditions arising from an existing partial obstruction by producing sharp flexions among the distended coils of intestine.

For diagnostic and surgical purposes the stomach can be readily inflated to almost any extent through a stomach tube, and when it becomes necessary to ascertain the presence of a visceral wound of the stomach, this method of inflation should be invariably practiced. Perforations in the posterior wall of the stomach, and in the region of the pyloric orifice, are not easily found by the ordinary methods of examination, while their existence and exact location can be de-

terminated in a few seconds, and with certainty by this simple procedure.

A number of successful operations for gunshot wounds of the stomach has been reported where one bullet produced two perforations; both perforations were discovered and closed by suturing, and the patients recovered. I have knowledge of two cases where one perforation was overlooked and the patients died of peritonitis, which could be traced to the unsutured perforation. In one of these cases a bullet passed through the cardiac extremity of the stomach in an antero-posterior direction. The perforation in the anterior wall was readily found and sutured, and as no other visceral injuries could be found the operation was completed. The patient died of septic peritonitis on the second day. The necropsy revealed a second perforation in the posterior wall of the stomach, and a septic peritonitis which had plainly developed from this source, as the large opening had remained patent, establishing a free communication between the interior of the stomach and the peritoneal cavity.

The second case is reported by Dr. Ohage, of St. Paul, Minn., and is of great interest, as one bullet produced three perforations in the stomach. The bullet passed transversely through the upper part of the abdominal cavity. Abdominal section was made, and two perforations in the stomach, one near the cardiac extremity, the other near the pylorus, were easily found and sutured. The surgeon had every reason to believe that he had sutured all of the perforations. The patient died of septic peritonitis, which, as the post-mortem showed, was caused by an overlooked perforation in the small curvature of the stomach. In both of these cases it would have been easy to discover the undetected perforation, had the stomach been inflated after suturing the perforations, which were found without this diagnostic test.

Hydrogen gas being the lightest body known, non-toxic, non-irritating, and possessing valuable inhibitory antiseptic properties, is the most suitable substance for ballooning the stomach or intestines for diagnostic purposes. Pure hydrogen gas made by using pure zinc and sulphuric acid is non-toxic, and when injected into large serous cavities, as the abdominal and pleural cavities, it produces no local irritation, and is absorbed in a short time. I made a number of experiments on dogs by injecting large quantities of the pure gas into the peritoneal and pleural cavities and into the subcutaneous cellular tissue, and examination of the tissues after the absorption of the gas always showed them to be in a normal condition. Pure hydrogen gas is not only a harmless aseptic substance, but it also possesses at least indirect antiseptic properties. The only pathogenic microbe which is known to be capable of reproducing itself upon a proper nutrient medium in

an atmosphere of hydrogen gas is the bacillus tetani; most pathogenic microbes require a certain amount of oxygen for their growth and reproduction besides the nutrient medium.

Inflation of the peritoneal cavity with hydrogen gas, may prove to be one of the means of preventing septic peritonitis in cases in which the hydrogen gas test is applied in the treatment of gunshot wounds of the stomach and intestines. There is absolutely no danger of causing an explosion in lighting the gas as it escapes from a perforation in the abdominal wall or from the end of a small glass tube. The smallness of the openings in the instances just cited will be a sufficient safeguard against an explosion. As a matter of course, ignition of a large volume of hydrogen gas should be carefully avoided, as such an occurrence would cause an explosion.

(To be continued.)

THE HISTORY OF MICROBIAN PRODUCTS WHICH FAVOR INFECTION.¹

BY PROFESSOR CHARLES BOUCHARD,

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[Translated for THE JOURNAL.]

1. It is not uncommon to see two different species of microbe invade at the same time an animal organism; the result of this mixed infection may be widely dissimilar. Sometimes the two pathogenic agents develop side by side, without any reciprocal influence upon each other; sometimes the animal will find in one of them an unexpected ally against the other, when it would have succumbed to the one affection, it survives the combined attack of the two; finally the two microbes acting together sometimes overcome an organism which would have resisted successfully either one of the invaders, if attacking alone. It is this last group which is reviewed by the *Gazette*. The writer remarks that it is the result most frequently seen; almost always infection intensifies infection.

It is not necessary that the two microbes both be pathogenic in order that their results become virulent; one of them may be a simple saprophyte. It sometimes happens in fact that two forms neither of which are pathogenic to the animal produce, when associated, death. This has been demonstrated by experiments upon what has been called symptomatic anthrax. The product of this microbe, so virulent for the bovine species, is without action upon the rabbit; inoculation of this animal, either under the skin or into the muscles, produces with this bacillus no result.

Let us now take another microbe, inoffensive of itself, the bacillus prodigiosus, and mingling it with the microbe of charbon symptomatique,

¹ Gazette Hebdomadaire, July, 1890.

inject it into the tissue or under the skin; the animal dies and we find at the point of injection a tumor with all the characteristics of anthrax. We here find two microbes, neither of which are pathogenic for the rabbit when injected alone, but which taken together give to one of them a quality which, in relation to this animal, it had not before. The action of the auxiliary microbe, in this case the bacillus prodigiosus, depends upon the matters secreted. The result is the same whether we employ the living cultures, the sterilized cultures or simply the glycerole of the cultures, that is what has been called the extract.

This power of one microbe to modify the qualities of another does not belong especially to the bacillus prodigiosus; other forms possess analogous properties. This fact has been established by experiment, by injecting the soluble matters of the staphylococcus aureus, of the proteus vulgaris or of sterilized extracts of putrefying flesh. The facts which have just been stated seem to have a general application as may be demonstrated by experiments with a large number of different forms. For instance, Flugge and Vossokovitch have shown that certain soluble products render possible the development in the organism of microbes non-pathogenic. Grawitz and Bary have found that the inoculation of the staphylococcus aureus with the secretions of bacillus prodigiosus intensifies the pus-producing power of the former. Recently Monti has rendered virulent the attenuated cultures of the pneumococcus and streptococcus by injecting at the same time the secretions of other microbial forms, and especially of the proteus vulgaris.

These soluble matters which favor infection do not act by altering locally the tissues into which they are introduced; their action is general upon the whole organism. In fact the better method where we wish to diminish or abolish the resistance of an animal to invasion, is to inject the soluble products directly into the blood. In this way we obtain the effect with doses twenty or thirty times less, and much more rapidly than when the injection is made at point of inoculation.

The experimental facts here noted agree perfectly with the results furnished by clinical study. Soluble substances similar to those secreted by the microbes under cultivation are constantly produced in the alimentary canal. M. Bouchard, who has studied with so much care the auto-intoxications dependent upon gastro-intestinal putrefactions, has demonstrated that the putrid poisons absorbed by the portal vein favor a great number of infectious inflammations and render these diseases more likely to terminate in suppuration. They, the soluble matters, as distinguished from the forms, when taken into the system produce a culture medium, so to speak, favorable for the development of pyogenic bacteria, and especially of the staphylococcus aureus.

It would seem, therefore, that the most efficient method of combating the infections from this microbe, consists in diminishing the intestinal putrefactions. This scientific deduction is in harmony with the well-known clinical fact that one of the best known forms of treatment for this class of troubles, is by the use of the insoluble antiseptics. By this means M. Bouchard has succeeded in arresting promptly the most intense and the most obstinate forms of furuncular disease.

2. If an animal be inoculated with the secretions of certain microbes, as for instance the bacillus pyocyaneus or of symptomatic anthrax, and if several days afterwards the same animal be inoculated with the living microbe, the previous inoculation having been sterilized, there will be no infection, the animal survives, it has acquired an immunity, in other words it has been vaccinated.

If instead of allowing several days to elapse between the time of the introduction of the secretions of the microbe and the living bacterium, the two are introduced at the same time, the animal succumbs, in fact death is produced more surely and more rapidly than if the inoculation is made with the living microbe alone. It thus appears that bacterian products have two diametrically opposite effects depending upon the time of their introduction as related to the inoculation of the pathogenic form.

This conclusion clearly follows from the experiments conducted by Bouchard with the bacillus pyocyaneus. He says, "I had thought that immunity would be obtained more quickly by injecting *en bloc* the vaccinating matters at the beginning of the malady, than by waiting for this immunity to result from the gradual development of the pathogenic agent. I had imagined that in this manner one would be able to diminish the duration of the disease, and possibly find in these products of bacteria a remedy for the infection itself. Experience has not justified this conjecture. The chemical matters produced by the bacillus pyocyaneus, which cut short, or prevent the disease when injected a few days or a few weeks before the inoculation of the bacillus itself, if injected at the same time as the living form, that is along with it or nearly at the same time, instead of diminishing the intensity of the infection increases it and hastens the death of the animal."

The result is similar with symptomatic anthrax. The matters secreted by the microbe of this disease confer immunity against inoculation practiced several days afterwards. If introduced into the system at the same time as the microbe, they favor the infection, and even render this bacterium pathogenic to animals ordinarily refractory, as for instance, the rabbit. Considerable quantities of the soluble matters secreted by this

microbe injected into the veins of the rabbit produce no harm; inoculation of the animal with the living microbe is followed by no morbid symptoms. If the injection of the secretions into the veins and of the living microbe into the muscles be practiced at the same time, the animal dies in from twenty-four to forty-eight hours with an enormous tumor, in fact of anthrax.

This fact enables us to understand how it happens that the inoculation of symptomatic anthrax, in the case of the rabbit into the anterior chamber of the eye, and at the same time into the leg results in the formation of a gangrenous tumor in the leg. Even in this animal the anterior chamber furnishes a culture medium for this bacillus; the development of the microbe in the anterior chamber results in the formation of the soluble products which, absorbed into the blood, renders the inoculation into the muscles virulent. In other words the resistance is abolished.

In relation to the facts just stated it is interesting to compare the results obtained by M. Courmont. In carrying out his experiments upon tuberculosis in the cow, he found that the injection of the secretions of the microbe into the tissues in advance of an inoculation with the living bacilli, instead of producing immunity, increased the susceptibility of the animal to the disease. The absorption of these matters or their introduction produced a permanent predisposition.

These facts are almost exactly the opposite of those reported by M. Bouchard. In the case of the bacillus pyocyaneus and of symptomatic charbon the introduction of the soluble matters secreted by these microbes produce immunity; in the case of the tubercular bacillus on the other hand, the introduction of the products of the microbe produces a permanently increased liability to tuberculosis.

3. If it is true experimentally that microbial products favor infection by modifying the general condition of the animal, we ought to be able to find out the nature of this modification. The experiments looking towards the solution of this problem constitute the most curious and interesting portions of the memoir of M. Bouchard. He commences by demonstrating, first, that the soluble products do not favor infection by so changing the quality of the tissues or fluids as to present to the attenuated microbe a culture medium in which it regains its virulence.

Attenuated pneumococcus or streptococcus introduced into sterilized broth of putrefying flesh readily develop, but do not regain their pathogenic qualities. A second hypothesis is suggested, namely, that the soluble matters, that is the secretions, are poisonous to the animal, and therefore diminish its resistance to the infection. "In order that this toxic effect may be produced, notable quantities of the bacterian poison must be introduced," says the author. He continues,

"In a majority of my experiments the quantity introduced was too small to produce any appreciable effect upon the general condition of the animal. In the experiments of Roger, there was no intoxication from the injection of the products of the bacillus prodigiosus, though it intensified the effects of the bacillus of symptomatic anthrax; in the rabbit there is in fact no infection, the animal possessing a natural immunity. Poisoning by bacterial products then do not complicate infection, but infection is rendered possible or intensified by the presence of these substances in consequence of some influence which they exert over the processes by which the organism defends itself ordinarily from microbic invasion.

As has been noted in a former number of the *Gazette*, it is probable, that immunity is the result of multiple conditions; we know, however, with any degree of precision of only two modes of resistance to infection, namely, phagocytosis, and a chemical alteration of the secretions, so that they resist the action of the microbes or destroy them. Experience seems to show that the presence of these products of bacteria do not modify the quality of the blood by which it destroys microbes; at least in animals vaccinated. There remains only the other hypothesis, that is that these products which favor infection do so by arresting the diapedesis, or migration of white corpuscles, and consequently preventing phagocytosis or the envelopment and digestion of the invading agent. Experiments bearing upon this last proposition were conducted as follows: He introduced under the skin of an animal the microbe to be studied enclosed in a small cell between two plates of glass. Of two animals operated upon one is reserved for comparison; the other is now subjected to the inoculation of the secretions of bacteria under the skin or into the veins. In the course of three or four hours the glass preparations are withdrawn and examined with the microscope, the number of migratory cells, the number of the microbes enclosed in them, and the number of free microbes in the two cells are compared. The results of these experiments have been extremely definite. The soluble products have arrested diapedesis, and their action has been especially marked when injected into the veins. It will be remembered that this mode of introducing the secretions of microbes had already been found to have the most prompt and certain effect in intensifying infection. If for instance we place under the skin of a rabbit a few drops of a culture of the bacillus pyocyaneus contained in a cellule, such as above indicated, we shall find in the course of three or four hours that there has taken place a very active migration of the leucocytes, and that the destruction of the bacilli is rapidly progressing. But if, repeating the same experiment, we inject simultaneously into the vein ten cubic centimetres of the

soluble products of the same microbe the diapedesis is not produced, there will be found here and there only a few leucocytes. The results are similar with the bacillus of anthrax and with the staphylococcus aureus; the sortie of the leucocytes which these microbes normally stimulates, is prevented by the introduction of the microbial secretions effected in artificial cultures. We have here the results reached when an animal is inoculated with the living form, and at the same time receives into the veins the formless product, in other words the secretion of the same bacterium. We have also seen that the soluble matters of one microbe introduced into the system favors infection by another form. M. Bouchard has demonstrated that the secretions of one species are capable of arresting or preventing the diapedesis which another species tends to excite. The soluble products of the bacillus pyocyaneus, for instance, prevents the leucocytes from attacking the bacillus subtilis, the attenuated bacillus of anthrax in the rabbit, the virulent anthrax in the dog, etc. In all these procedures there had been previous experiments with water, and with simple bouillon, and it becomes therefore certain that the results were dependent upon the relation of the living forms and the non-living product. In pursuing still further these experimental researches, we are able to gain some information as to the mechanism, by which the unformed products of microbes prevent the migration of leucocytes.

Diapedesis is in relation to the state of the blood-vessels; it is very active when the arteries are dilated; it is diminished or arrested when the arteries are contracted. It has been demonstrated during studies upon the streptococcus of erysipelas that section of portions of the sympathetic which are distributed to the point of inoculation, notably increases the migration of leucocytes at the seat of the operation. Cellules, such as described above, were placed under the skin of each ear; on one side the superior cervical ganglion was destroyed; at the end of four hours, it was found that the leucocytes upon the side from which the nerve had been removed were very much more numerous, in fact thirty to forty times more numerous than upon the side having the nerve intact. Vascular constriction has an effect exactly the reverse, diminishing diapedesis, and it is by producing this vascular constriction that the soluble products of microbes prevent the migration of the round cells and consequently diminish the resistance of the animal to infection. The invaders are allowed to develop, while the besieged are prevented from making a sortie for the purpose of the destruction of the enemy.

MM. Charrin and Gamaléia have made some curious experiments bearing upon this problem. By rubbing the ear of two rabbits with croton oil, and then injecting into one of them the solu-

ble products of the bacillus pyocyaneus, a marked difference was observed in the two animals; in the one not treated with the microbial product there were the usual results of the agent, vascular dilatation and dermatitis with swelling; the other, treated with the bacterian secretion, maintained its normal appearance and condition.

This action of microbial products is transient; at the end of a few hours elimination has been accomplished and the vessels again readily dilate. In this case the morbid predisposition is of short duration; if a certain time elapses between the introduction of the solution and the inoculation with the living microbe, twenty-four hours for instance, it will be found that the resistance of the animal has been restored to its normal condition. In view of these facts it is pertinent to ask, how does the injection of the solution favor the infection? If the elimination is accomplished in so short a time, diapedesis ought to take place and the bacteria should be destroyed. It may be said in answer, that while the soluble matters hold in check the migration of the leucocytes the microbe has had time to develop and to produce its own secretions, so that when the elimination of the introduced product has been accomplished, the contraction of the vessels is maintained by the new secretions formed in the tissues or fluids, while the living form continues the work of invasion and destruction.

It is easy to understand how complex fluids such as those used in these experiments, may produce quite different effects. Matters which favor infection act promptly but are only transient, elimination rapidly taking place; substances which give immunity require a considerable time to produce their effects, but accomplish a permanent modification of the fluids or tissues. These new facts, established by the experiments of M. Bouchard, serve to explain many obscure points in the history of infectious diseases.

The soluble matters of which the effects have been so thoroughly studied by the experimenter, commence to be formed as soon as the microbe begins to develop; they are necessarily related to its normal vegetation. If these matters do not possess the property of contracting the vessels, diapedesis will take place, the leucocytes will come to devour the invading agent, and in this manner prevent general infection. If the substances secreted on the other hand do produce contraction of the walls of the vessels, the escape of leucocytes is prevented, the microbes develop, multiply and are disseminated; they are pathogenic precisely because they produce a secretion which has this action upon the blood-vessels, in other words a poison to vascular walls.

It would appear that natural immunity must result, in part at least, from the fact that the blood-vessels of the refractory animal are not responsive to the microbial products, that in the

presence of these substances the vessels retain their normal properties and diapedesis in the presence of living bacteria takes place, and consequently the destruction of the invader is accomplished. Is the process the same in the case of acquired immunity, that is to say, the resistance conferred by vaccination?

In endeavoring to answer this question we find a new element. Introduced into an organism modified by vaccination, the bacterium does not develop well; the blood and tissues do not furnish a good culture medium; or perhaps we should say the blood and tissues of a vaccinated subject are themselves destructive to bacteria. As a result, there is produced by the invading microbe only a minimum quantity of soluble products, and it is unable to protect itself from the army of migratory cells. These come to attack a form already enfeebled by a bad soil and unhealthy surroundings, and as a result the foreign agent is easily overcome and destroyed. The animal resists infection, not because the bacterian products have not the power to act upon the vessels, but because the infecting form is not able to produce its normal quantity of these products.

We have here briefly analyzed the experiments of M. Bouchard, which furnish, in part at least, an explanation of the phenomena of susceptibility—of natural immunity—and of acquired immunity, that is by vaccination. Without doubt, there is much yet to be done before these complicated and difficult problems shall be entirely solved; problems which up to the time of these studies seemed to defy all explanation. Is it not very much to have revealed to us in part the mechanism of these processes, and by positive and well-established facts, to have established a general law which accords so well with clinical observations and the results of experiments?

MEDICAL PROGRESS.

INTESTINAL ANTISEPSIS.—(*Wiener medicin. Presse*, May 25, 1890.) To render innocuous the pathogenic organisms of the intestines, attempts have been made with drugs administered by the mouth or rectum. By the first method only those remedies are indicated that will pass through the stomach unchanged. Calomel is an agent of this class, but while serviceable in simple fermentative conditions, it is impracticable in infection of long duration. BOUCHARD used large quantities (100 grams daily) of pulverized carbon in typhoid fever; naphthalin, iodoform and salicylate of bismuth have also been recommended. These agents possess a certain antiseptic influence on the contents of the alimentary canal, but on the intestinal wall their action is

nil, which fact receives confirmation in the treatment of typhoid fever. The intestinal antiseptics require heroic administration, and aside from toxicity, they are absorbed in the stomach and altered in their chemical constitution before attaining the desired site. For this reason CANTANI considers their exhibition *per rectum* as the proper method. Repeated experimental investigations show that intestinal irrigations may pass the valve of Bauhin, and reach the upper part of the small intestines. The advantages arising from rectal injections are: the use of large doses, direct action and the avoidance of gastric irritation. There are also other advantages attending this method. The use of cold water reduces the temperature; whereas hot water is of benefit in cholera. Thorough lavage of the intestines is also attained and a certain quantity of bacteria and ptomaines are mechanically removed. Cantani considers carbolic acid and tannic acid to be the best intestinal antiseptics. Corrosive sublimate exerts no antiseptic action, owing to its union with albumen. Tannic acid fulfils a double indication for rational intestinal antiseptics; it paralyzes the vegetative activity of the bacteria and renders the ptomaines innocuous. The value of tannic acid in effecting the objects already mentioned has received abundant clinical proof in the treatment of intestinal catarrh accompanied with fermentation and true specific dysentery. If the injections of tannic acid prove too irritating, then the addition to the injection of about 1 litre of oil is of advantage. In typhoid fever these injections are of great value; meteorism and diarrhoea disappear and the entire course of the disease is favorably influenced. In the incipency of this disease, it is possible by injections of tannic acid, to abort it. Cantani has also secured an abortive action in the beginning of typhoid with injections containing 1 gram of the hydrochlorate of quinine, and from 10 to 50 grams of pure carbolic acid in two litres of cold water.—*Occidental Medical Times*.

INDUCTION OF PREMATURE LABOR.—In these days when abdominal section is so freely practiced obstetricians of authority tend to throw discredit upon the induction of premature labor and craniotomy, and so advocate Cæsarean section. PROF. AHLFELD, however, has lately issued an important monograph on 118 cases of induction of labor, performed by himself and his assistants between 1871 and 1890, at Leipzig, Glessen, and Marburg. In 111 of these cases labor was induced on account of deformed pelvis, in the remaining 7 it was undertaken because of some general illness. Only one mother appears to have died from the direct results of the proceeding in question, she succumbed to damage of the soft parts caused by the passage of a large head

through an atypical pelvis. Four mothers died from diseases which either followed accidentally or were those for which labor had been induced (convulsions, tuberculosis, heart disease), 75 mothers recovered without rise of temperature. One hundred and twenty-one children were thus delivered (there being three cases of twins in the 118 labors). Of these 19 were stillborn, 18 died in the course of the first day, 9 died before the mother was discharged, and 75 left the hospital, etc., alive. Out of 99 carefully registered contracted pelvis cases (including 2 twin labors) 86 children were born alive, 15 stillborn, and 61 survived. On the other hand, in 6 cases of Cæsarean section performed in Professor Ahlfeld's wards, 2 mothers and 1 child died. Space forbids any notice of the author's statistics as to the extent of contraction in the pelvis. The monograph deserves close study. Professor Ahlfeld insists that the introduction of a flexible bougie into the uterus without rupture of the membranes is by far the best method, but the pains are apt to be slow, so that accessory means are sometimes required. There can be no doubt that the majority of practical obstetricians are more likely to attain good results by inducing labor than by performing Cæsarean section or Porro's operation.—*British Medical Journal*.

ALBUMINURIA IN PREGNANCY AND LABOR.—LEOPOLD MEYER (*Zeitsch. f. Geb. u. Gynäk.*, xvi, 2) examined the urine of 1,127 pregnant women in the pursuit of this study, and of 1,138 women in labor. The urine examined was in all cases removed by the catheter. The test for albumen was by means of boiling and the addition of nitric acid. Quantitative analysis was not made. In all cases where even a trace of albumen was obtained, the urine was placed in a cone-shaped vessel and the sediment examined by the microscope.

Albuminuria in Pregnancy.—Albumen and albuminuria comprise many things. We should keep in view serumalbuminuria, globulinuria, peptonuria, hemi-albuminuria, etc., but to the clinician this differentiation is not feasible. The latter must call in aid the microscope, and the greatest weight is to be attached to the presence of urinary casts. Where the latter exist, the strong probability is that the albuminuria is of renal origin, which is to be separated from the other form of albuminuria, which, in a large number of cases, is evidently not renal. The presence of the so-called renal epithelial cells is of great moment. Of the 1,127 pregnant women whose urine was examined, the latter was found free from albumen in 93.3 per cent.; it contained "doubtful" albumen without casts in 1 per cent.; albumen without casts, 3.2 per cent.; albumen with "doubtful" casts, 0.3 per cent.; albumen with casts, 1.9 per cent.; together with two cases,

subjects of gonorrhoea, which showed albumen without casts, and one case with renal fistula, which showed albumen and casts. Deducting the last three, albumen was found beyond doubt in sixty-one cases, or 5.4 per cent. These figures, for themselves, are of little interest; the important thing is to investigate the conditions which dispose to albuminuria, and its significance for mother and foetus. As regards the former, little is to be learned from material gathered in hospitals, the modes of life of the patients and their surroundings not being accessible to interpretation. As regards the symptoms during pregnancy, albuminuria without casts very seldom shows any symptoms. When they exist, they generally depend upon cystitis or pyelitis. Albuminuria with casts in general also shows no symptoms.

Albuminuria during Labor.—The author investigated the urine of 1,138 non-selected cases, and found urine without albumen in 75 per cent., with albumen in 25 per cent. The albuminuria may increase during the progress of labor, or may be absent at one time, to appear later on. The albuminuria found during labor unquestionably begins during the parturient act.

Course of Albuminuria during Pregnancy and Labor.—The rapid disappearance of albuminuria—as well as that accompanied by eclampsia—on the cessation of labor, led to an unusually favorable prognosis for the affection; later investigations indicated a certain reservation, as it was found that the trouble was prone to become chronic. From his researches the author concludes that the albuminuria without casts appearing during labor rapidly disappears on its termination. It is possible that these patients have an exaggerated disposition to catheter cystitis, and especially those in whom albuminuria existed during pregnancy; in these also the affection may terminate spontaneously, but disappears more slowly than in the first-mentioned cases, and sometimes persists for some time. The more considerable the albuminuria during labor, the longer time was required for its subsidence; but the period of recovery is not dependent upon the quantity of the casts. As regards the termination of cases of albuminuria with casts observed during pregnancy, the percentage of uncured was a large one. The prognosis in this affection must be regarded as very doubtful as regards recovery; albuminuria with casts appearing during labor, in most cases terminates after birth, generally four days post-partum; a small proportion remains uncured.

The Relationship between Albuminuria and the Vitality of the Fetus, and the Alterations in the Placenta.—In women with albuminuria relatively more frequent premature labors took place, showing especially in cases in which the quantity of the albuminuria was considerable; but the observa-

tions of the author show no particular causative effects in albuminuria as regards the death of the foetus. The alterations in the placenta in general comprise a premature separation of the organ, with the appearance of so-called white infarcts, which have been associated with the renal affection in the mother. Of the 1,344 placentæ investigated, white infarcts as well as evidences of premature separation were found in but twenty-six. While it is evident that a certain relationship exists between renal affections and changes in the placenta, it is not of such indubitable and conspicuous a character as is claimed by some.—*Am. Jour. of Obstetrics.*

THE BACTERICIDE EFFECTS OF BLOOD.—PROF. Y. FODER, who has been carrying on a number of experiments on the bactericide effect of blood, reports some of his results. He finds that the bacilli of anthrax survive in larger numbers in defibrinated arterial than in venous blood, and in fresh blood more than that which had been exposed to the air for several hours. Blood allowed to stand for 16 hours showed no bactericide effect at all. On one occasion freezing did not affect this property, but on several others it destroyed it; as also happened when it had been warmed to 50°C., though a lower temperature (38° to 40°C.) increased the bactericide properties. Prof. Foder also examined the effect of various drugs, injected into the stomach, upon the bactericide properties of the circulating blood. Dilute hydrochloric acid, tartaric acid (3 to 5 gm.) lactate of quinine (0.6 to 1 gm.) diminished these properties, while muriate of sodium (3 to 5 gm.) rather augmented it. Alkalies invariably increased it. The decrease in the number of the anthrax bacilli inoculated into the blood was as follows: Carbonate of ammonia (from 2 to 5 gm.): before the injection, 27 per cent.; after the injection 38 per cent. Phosphate of sodium (from 2 to 5 gm.): before the injection, 32 per cent.; after the injection, 60 per cent. Carbonate of sodium (from 2 to 5 gm.): before the injection, 23 per cent.; after the injection, 76 per cent. Carbonate of potassium (from 2 to 5 gm.): before the injection, 48 per cent.; after the injection, 77 per cent. Carbonate of sodium from 2 to 5 gm.): before the injection, 29 per cent.; after the injection, 83 per cent. He injected into the stomachs of rabbits, subcutaneously, from 1 to 5 gm. of bicarbonate of sodium, and made, either simultaneously or after from 5 to 24 hours, inoculations with anthrax. The control rabbits which had not been protected by the sodium salt, succumbed, and numerous bacilli were found in the blood and in the spleen. Out of 19 rabbits protected, 3 (15.6 per cent.) died. 9 (47 per cent.) of the rabbits died, and no bacilli, or a very small number of the bacilli, were found in the blood; these rabbits, however, survived the experiments

for a considerable time. 7 animals (37 per cent.) resisted infection, and this was also occasionally observed in subsequent experiments. Dr. S. Gerlőczy had been induced by these experiments to try the bicarbonate of sodium in typhoid at the Rochus Hospital, and had observed a favorable influence from it. Dr. O. Petrick alluded to the difficulty of counting the bacteria in the blood after inoculations; and to the fact that in estimating a decrease or increase, it should be remembered that many of the bacteria were retained in the capillaries of the liver and spleen, and in the marrow of the bones, being, in fact, filtered out. Ponfick had stated that the white corpuscles of the spleen were able to take up granules of cinabar, and that these became localized; but the granules could also be found in the capillaries of the marrow after extirpation of the spleen. Similar conditions were observed in the pigment granules in the blood in cases of intermittent fever, which disappeared after the attack. Prof. Arenstein also stated that he had found them in great numbers, after death, in the capillaries of the liver and spleen, and in the marrow. Dr. Y. Donath said that the bactericide property of the organism was a medical postulate, when we considered how many bacteria entered the body through the lungs, or the surfaces of wounds. Prof. Foder deserved credit for demonstrating that this effect was to be ascribed to the influence of the blood. He did not think that this was due to the alkalies, but rather to the increased power of oxidation that they produced. Thus we knew that albuminoid bodies are more readily oxidized by ozone in an alkaline solution. Under the title of disinfectant, in its widest sense, we understand a remedy-capable of killing microbes, though these remedies might differ widely in their chemical constitution. A drug, as common salt, might be inert in a diluted state, and most active when concentrated. Prof. Foder's experience supported the theory that the oxygen of the blood had a bactericide effect, as he had found that arterial was much more active than venous blood.—*Vienna Cor., Occidental Medical Times.*

VOMITING OF PREGNANCY.—When this symptom proves absolutely intractable, and it reaches such a degree as to endanger the life of the patient, PUGLIATTI (*Morgagni, 1889*) recommends the induction of abortion. For this purpose he advises the introduction of bougies having a thickness, 6–10 mm., extending 5 or 6 cm. into the cavity of the uterus. After 2 or 5 hours another and somewhat larger (2–3 mm.) bougie is inserted, this is followed by a third, which is allowed to remain several hours or until distinct contractions of the uterus are observed. The author claims that this method is free from danger, and with it the foetal membranes are preserved.

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SATURDAY, AUGUST 30, 1890.

DISCUSSION ON HYPNOTISM.

At the late meeting of the British Medical Association this subject attracted unusual attention in the Section of Psychological Medicine. DR. NORMAN KERR read a paper entitled, "Should Hypnotism have a recognized place in Therapeutics?" He fully accepted all the hypnotic phenomena as facts, but in hypnosis he recognized only disordered cerebral states, and abnormal psychical conditions, with exaltation of receptivity and energy.

He denied that it had any therapeutic value, claiming that the after effect was a disturbance of mental balance, a dissipation of nerve energy and nerve exhaustion. Frequent repetition was apt to cause deterioration of brain and nerve function, intellectual decadence and moral perversion. Hypnosis was a departure from health and a diseased state. It was also a true neurosis, embracing the lethargic, cataleptic, and somnambulistic states. Thus, if a disease was cured by hypnotism, this would be only by substituting another disease. Though suffering is often temporarily lessened by hypnotic suggestion, the underlying disease was not necessarily cured. Any one may obtain relief from pain by becoming drunk, but this respite is dearly bought, as drunkenness always aggravated the diseased condition. By hypnotic anæsthesia, though evanescent oblivion might be secured, the lethal power of the morbid disorder, of which the pain was a merciful if unwelcome messenger, was in most cases increased. The alleged benefits from hypnotism were claimed to be cures of all forms of nerve dis-

orders. Dr. Kerr believed that all such cases were intensified by this remedy. He urged that this therapeutic measure was dangerous, and should not be employed in any way. That it always favored states of mental unsoundness, and tendencies to develop morbid nervous susceptibilities, and unstable brains, which in these days of nerve exhaustion was especially dangerous.

DR. KINGSBURY replied to Dr. Kerr's attack on hypnotism, and asserted that no remedy of modern times promised so much in the treatment of nerve disease. He gave many instances of the relief of insomnia, neuralgia, and other diseases, and final cure by the hypnotic suggestions, and declared in the face of the facts (which were beyond all dispute), it was folly to condemn this remedy. In the discussion several prominent alienists expressed themselves guardedly, but in favor of a more careful study and experiment with hypnotism.

Dr. Kerr's paper has been freely discussed, and evidently is supported by many of the leading medical authorities. On the other hand, the *French school* of investigators, including Drs. CHARCOT, LUYs, and the *Nancy school* of medical teachers, and many very able students of mental disease, declare that with hypnotism it is possible to relieve and cure a great many of the neurotic diseases that are now considered incurable. It is evident that the phenomenon of hypnotism has passed beyond the region of quackery, and is now a matter of medical and scientific investigation. Already there are three or four works published, describing what is known up to the present, of hypnotism and its value in medicine. In a late number of the *English Fortnightly Review*, Dr. Luys, a distinguished authority, describes at some length a series of hypnotic phenomena of the most marvelous character. The impression on the reader is that if this is real and practical, we may expect from hypnotism the most valuable remedy and therapeutic measure, that has been found in the century.

While Dr. Kerr's protest and warning against the use of hypnotism is timely, and will do good in checking the contagious enthusiasm of many, still there is a range of facts, and a possibility of practical application, that cannot be ignored or put aside as unworthy of study.

It would appear that the American physician might find a fertile field for the practical study of

hypnotism in the rush and revolution of events that so profoundly impress the brain and nervous system, in this country. We commend this new field of investigation to our readers, assuring them that some of the most acute medical students of the world have taken up this topic, and an almost boundless realm of possibilities, bearing on the power of the mind over the body, appear in the medical horizon in this direction.

THE PARAMOUNT QUESTION.

The subject of preliminary education preparatory to the study of medicine holds a prominent place in the thoughts of the profession, at the present hour, both in this country and in Europe. It is not the question of its importance, for that hardly admits of argument, but rather as to what the accepted standard of requirements shall be. So too, in our medical colleges there is a general demand for lengthened terms of study, and for more critical examinations. This is well, and the fact needs no restatement, that every diploma should carry with it the guarantee of thorough preliminary and medical training. But it seems to us that another and a paramount question lies beyond these: the question that relates to the after-training of the man who has received his degree and entered upon his professional career. Coming to the fulfilment of a sacred obligation he is bound to render to his patient the most perfect service of which he is capable; a service which justice and humanity alike demand. The fulfilment of this obligation is partly conditioned upon his previous training, but more and more as the years go on, it depends upon his *after-development*. And here is the signal danger: that men, especially if not impelled by the stimulus of necessity, will lapse from active exertion, and rest more and more contented, with imperfect methods of observation, and spend the best of their years in a sort of rutty, routine practice. Humanity has claims upon our profession for better service than such men are apt to render, and the agency that may lift them from such low estate would be its greatest benefaction. Some men are a stimulus unto themselves; they grow in knowledge and in wisdom as they grow in years, until their attainments become their crowning glory. Un-

fortunately for the sick man and for a noble profession such men are exceptional.

At this juncture the added stimulus that most men seem to need is that of friction, mind with mind. They need to measure themselves with other men, and thus to discover their own strong points and their weaknesses as well, and herein lies the value of the medical organization which, as best it may, shall supplement the college work. Such organizations have been exceedingly helpful in the past, and they will be in the future. In most instances they are sustained by the personal efforts of the few, and have within them the element of instability.

What we seem to need now as much as we need medical colleges, is, a perfected plan of medical organization which shall be acceptable to the members of the profession—which shall command their allegiance, and which shall be to them in turn an inspiration to *continuous* work. Such development cannot be the work of a day, nor of a year—it must be one of time, and it should bear the impress of our wisest counsellors. With this purpose in view, at the meeting in Nashville the Editor of the *Lancet-Clinic* offered a resolution that a committee of nine be appointed to report upon the propriety of modifying the present working plans of the Association. We think the resolution was timely and its purpose wise. A well-selected committee can render a valuable service by submitting a carefully prepared report which shall cover the whole ground, advising as to whether our present plans are best, or whether others would serve us better.

It would surely be presumption on our part to forestall the work of that committee; but it does seem evident that a representative plan by which delegates of local societies shall constitute State organizations, and that the representatives of these shall form the executive body of a National Medical Union, would furnish an enduring basis for a permanent National organization. Every member of every local organization could thus be a member of the National Association, and be there represented.

It was this representative feature, so in accord with the genius of American institutions, which led us to refer in a recent article to the constitution of the Medical Society of the State of New York.

In making that allusion, it is hardly necessary

to say that we simply had reference to the working plan of that society. The question of code, ethics or affiliation was not in our mind. We neither intended to bestow a passing compliment nor by implication to pass censure upon the State Association—now, perhaps, the most vigorous and successful organization in this country;—and of itself so strong that it can be alike indifferent to either praise or criticism. What we desire is this—to ensure for every legitimate medical practitioner a local medical home, where with his fellows he may do his best work; that the representative men of these homes shall constitute strong State societies, and that in the union of all our State societies we may develop a National medical association which may number a membership from twenty thousands upwards, including each member of every local organization. Let the annual fee for membership be placed at five dollars: one for the local society, one for the State—and three for the National organization—the latter amount to be a subscription for *THE JOURNAL*. Then will the purpose of the Resolution offered at Nashville by Dr. Comegys, of Ohio, be fulfilled, and *THE JOURNAL* find its place at the fireside of every appreciative physician in the land.

DISEASES OF BRITISH COLUMBIA.

A letter to the *British Medical Journal* from British Columbia throws some light upon the diseases of the Indians in that remote region. Speaking first of the theory that leprosy has its origin in a fish-diet, the writer avers that this disease is wholly unknown in that province, although the chief food of its natives is of fish, all the year 'round. The fish that are prepared for winter consumption are roughly and incompletely cured, and become highly disagreeable in odor, partially decayed, in fact, in many cases. If fish-food can produce leprosy the Indians of the Fraser River country should be decimated by that disease. Salmon die by the thousands in that river, and along its tributaries, and they are freely eaten, both dead and dying, even when the river itself is tainted with odor of decaying fish. Malarial fever is unknown in that country, although governed by many of the conditions that seem to make it prevalent in other parts of the globe. The low-lying lands along the numerous rivers are periodically flooded and satur-

ated by the down-flow of water from the melting of snow in the three great mountain ranges. Meadows and prairies are converted into lakes, and while the floods are subsiding, and afterwards, thick mists arise, morning and evening, for months. And yet these regions are not regarded as being unhealthful or malarious. Another scourge of mankind, hydrophobia, has not reached that distant point. If a superabundance of ownerless, wild and neglected dogs could produce rabies that province should suffer acutely. The camps of the Indians are well-nigh surrounded by wretched, half-starved and mongrel canines; and in Vancouver the plague of ownerless dogs was so great that active measures had to be put in force for their destruction. Diphtheria, however, has found its way into that beautiful country, across the barrier of the Rockies, and rages with virulence among the young. Doubtless the first case was imported; and it would so be found if due inquiries were to be made. Once imported, the absence of drainage has enabled the disease to flourish and become endemic. The epidemic of influenza, which last winter visited the Pacific coast, extended into the interior also, and produced sickness and many deaths among the tribes in the heart of the country. Superstition and witchcraft had full sway among the ignorant natives in their efforts to drive out the demoniac causes of their strange visitation, and in the case of one of the tribes, a little boy of 7 years, the nephew of the chief of that tribe was fixed upon by the medicine-man as the responsible cause for the epidemic and its mortality. It is alleged that the child was put to the torture and then condemned to death by burning at the stake. This last sentence was not carried out, for the lad was rescued, at almost the last moment, by a courageous white miner, who carried off the boy in the face of the opposition of nearly the whole village.

FIDUCIARY RESPONSIBILITY.

It is a matter of no ordinary moment that while this has been justly termed the age of getting, yet each year the fact is more and more emphasized that it is also the age of giving. If with the power to accumulate there is joined a spirit of benevolence, and a wise discrimination in its exercise, then may men be earnestly con-

gratulated for the noble services they may render to their fellows. If the record could be accurately stated it would be found that by far the larger amounts contributed are the aggregates of pittances given by the masses, and which go so largely to the supply of daily needs. So, too, in matters of collections for all benevolent and religious purposes, the yearly contributions of those with moderate means amount to many millions. In connection with the marvelous developments of wealth which have been made in America within the last half century, not a few, but, rather a multitude of business men have come into the possession of great wealth, and it is a notable fact that in great numbers of instances a princely generosity has been manifested in its bestowment. Hundreds of millions of dollars are thus represented in churches, universities, seminaries, colleges, parks, fountains, galleries of art, and especially in charitable institutions designed for the cure or alleviation of suffering—in homes for invalids, and in hospitals everywhere; and as the years go by this spirit of benevolence is being rapidly developed. Capital seems intent upon giving back to labor its full reward, and more. The outlook in the direction of endowments and bequests was never so hopeful as it is to-day.

But this very fact brings with it its word of caution. There must be no betrayal of trusts. Even of more value than the noble impulse that prompts the giving, is that other priceless possession of *fidelity*.

This matter of wisely handling large amounts of capital in the care and conduct of hospitals and charitable institutions is one that often bears close relation to the medical men in charge. They, too, are often responsible in measure for the direction in which charities shall be bestowed. On the part of these and upon all men charged with fiduciary trusts there rests a grave responsibility.

If the purposes of donors in the future, as they have been mainly in the past, shall be faithfully executed, there hardly seems a limit to the bestowments that will be made for worthy objects; but, if the time shall come when even a few trusted ones shall prove recreant, then, and that suddenly, will the streams run dry and the fountains of benevolence cease to flow. The giving is of more account than the getting, but most of all is the service of faithful stewardship.

MICROBIAN PRODUCTS WHICH FAVOR INFECTION.

The importance attached to matters secreted by pathogenic microbes is constantly on the increase. As a result pathologists now attribute to the secretions the greater portion of the effects which minute organisms produce.

From a purely physiological standpoint microbian products may be divided into the three following groups: 1. Those which exert upon the economy a poisonous influence, and upon which the virulent properties of the microbe depends. 2. Those possessing a vaccinating power; they confer immunity not by accumulating in the tissues but by passing through them and modifying the dynamic power of cells and the chemical qualities of the fluids and tissues. Finally, a third group, which, though themselves non-pathogenic, diminish the power of resistance of the organism to the attacks of other pathogenic varieties; and even render forms non-pathogenic virulent.

The effects upon the system of the different products secreted by these microscopic forms have been very thoroughly studied by PROF. CHARLES BOUCHARD of Paris, and the results reached have been recently published in a memoir entitled "Action des Produits Secretés par les Microbes Pathogenes. Paris, 1890." From the *Gazette Hebdomadaire* we translate a review of that portion of the work of Prof. Bouchard relating to the "History of Microbian Products," which diminish the resistance of the organism to the pathogenic agents and thus favor the development of infectious diseases.

EDITORIAL NOTES.

SEVEN HUNDRED PAPERS.—This is the reported number of papers submitted at the Berlin Congress. The paper presented by Professor Bouchard, of Paris, required two hours for its delivery. At that rate, it is difficult to conceive how justice could be done to each contributor, or at what dates discussions would be in order.

THE ANNUAL MEETING OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—We desire again to refer to the annual meeting of this Association, which will convene Oct. 8 at Louisville, and continue in session for three days. The city of Louisville can afford ample accommodations for

any number of guests, and the profession of that city, whatsoever they undertake, are never found wanting. We not only anticipate a large attendance, but also the presentation of an unusual number of valuable papers. Pleasure and profit will conspire to render this meeting a notable success.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its eighth annual session at Louisville, Ky., Oct. 6, 7, 8. All leading subjects relating to nasal and naso-pharyngeal diseases will be opened for discussion by a leading fellow of the Association. The Secretary, Dr. R. S. Knode, Omaha, Nebraska, will furnish any information to physicians desiring to become members. As the date of the first session is three days earlier than that of the meeting of the Mississippi Valley Medical Association it will be feasible, for those who so desire, to attend both Societies, as the meetings of both are to be held in Louisville.

ONTARIO MEDICAL ASSOCIATION.—We have recently received a copy of the manual of this prosperous Association. It is a finely printed pamphlet of twenty-four pages, with revised and amended contents down to June, 1889. It gives the membership and officers to the date of the last Convention, also the Constitution, By-Laws and elaborate Code of Ethics, which latter is essentially the same as that of the American Medical Association. It is a most attractive and serviceable little handbook.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The next meeting will be held at Charleston, S. C. It will convene December 16. The sessions will be continued for four days. Among the topics announced are those of sanitary house construction in its various details, the disposal of sewerage, isolation of hospitals for infectious and contagious diseases, maritime sanitation at ports of entry, the restriction of tuberculosis, etc. We anticipate the presentation of a valuable series of papers in connection with this meeting.

DR. ROBERT STEPHENSON, of Adrian, Mich., died August 11, at Berlin, whither he had gone as a delegate to the International Congress. As his death was sudden, the police officials believed it to be expedient to investigate its causes. A post-mortem was held, and the official verdict was that Dr. Stephenson died from cardiac

syncope, superinduced by an overdose of morphia, taken accidentally, as is believed, and not at all with suicidal intent.

THE MICROBE IN LONDON.—Our latest advices are to the effect that cholera is steadily making advances in Russia, in Spain, and along the borders of the Red and Mediterranean Seas; but the notable fact of the week, which seemingly is well authenticated, is that of the appearance of a single case of cholera in London.

Those who are not committed to the view of specific contagion will enquire with emphasis if it be not true, that sporadic cases, as a rule, precede any local development of an epidemic of this disease—cases in which seemingly no means of transmission was possible. In this instance we sincerely hope that no effort will be spared in determining all the circumstances connected with its development. Was there any possible means of communication of this patient with others in any of the infested districts? Do the physicians in attendance unite in pronouncing this to be a typical case of Asiatic cholera? Is there any evidence that the disease is being communicated to other persons in immediate contact with the patient? Facts in such a case as this are valuable, and a critical observance of them on the part of the London physicians will be of special service to the profession.

THE CARE OF THE INSANE IN THE STATE OF NEW YORK.—The redistricting of the State to conform to the new act providing for the care of the county insane, by the State asylums, will be begun in September. The Board, appointed for that purpose, will make a temporary apportionment, subject to future alterations as occasion may dictate. When the division of the State into districts shall have been made, the charge at all hospitals will be the same to the counties for the same class of patients. There is an informal understanding that when the State shall have completed its provisions so as to accommodate all the insane then in the county almshouses, the amounts to be charged to the counties, respectively, will be \$2.50 per week for the class of patients that have been under treatment for three or four years, while for the class under treatment for less periods, the charge will be \$4.00 per week.

TOPICS OF THE WEEK.

PRESENTATION OF THE GOLD MEDAL TO SURGEON PARKE.

At the annual meeting of the British Medical Association held at Birmingham July 31, on rising to receive the gold medal of the Association, Surgeon Parke was greeted with enthusiastic applause, which was continued for some minutes.

The President said that the reception Surgeon Parke had received rendered necessary only a very short speech from himself. It was comparatively easy to state in words particulars of deeds done in a few minutes or hours, but when they had to speak of acts repeated day after day, week after week, month after month, and even year after year, the task became more difficult. An accumulation of hundreds and thousands of acts performed cheerfully and simply by Surgeon Parke, warmed their hearts and commanded their respect. Coolness of head and stoutness of heart which sustained him in the performance of his always arduous, often loathsome, and constantly dangerous duties were what they had now, in a small way, to recognize. He had authority for stating that but for the state of his health, which, however, they were glad to know was rapidly improving, Mr. H. M. Stanley would have been present, with Mrs. Stanley, to tell them in some detail what Surgeon Parke had done. In Mr. Stanley's absence he (the President) could not do better than quote a few of his published words, which he himself, from having Surgeon Parke as his guest for a few days, could testify were only words of truth and soberness. "This expedition," Mr. Stanley said, "possesses the rarest doctor in the world. He is such a combination of sweetness and simplicity, so unostentatious, so genuinely unobtrusive. We are bound to him by the cords of love. We have seen him do so much out of pure love for his cases that human nature becomes ennobled by this gem. I greatly honor what is divine in man. This gift of gentleness and exquisite sensibility affects even the dullest. May the kindly angels record this nobleness, and obliterate all else." He would not dim the beauty of this exquisite sketch by any words of his own. The material medal was awarded by the Council of the Association, but the honor which it symbolized must come from the true and hearty approbation of all its members. In conclusion he asked the meeting to give three hearty cheers for Surgeon Parke.

This having been enthusiastically done, the President hung the blue ribbon attached to the medal around Surgeon Parke's neck, and addressing him said:

Surgeon Parke, of the Army Medical Service, I have the honor, on behalf of the thirteen thousand members of this great Association, to ask you to accept this medal which we have conferred on you. In their name, and on their behalf, I offer you the right hand of fellowship, and heartily wish you God-speed.

Surgeon Parke, who was greeted with prolonged applause, said: Mr. President, members of the Council, ladies and gentlemen, allow me to express to you my grateful thanks for the honor you have conferred on me

by awarding me the gold medal of the British Medical Association. I can assure you that those thanks may be divided into as many parts as there are members in the Association. It is my greatest gratification to know that my services in connection with the Emin Pasha Relief Expedition have been appreciated by members of the profession to which I have the privilege to belong, because I know that there are none more critical, and none who are better judges of the difficulties which have had to be overcome, especially when you consider that for 6,000 miles our only means of transport was on men's heads. I feel not the less gratified that, after three years of marches across Africa, through difficulties and disasters and dangers which, perhaps, the annals of history can scarcely equal, I have the good feelings of my wonderful chief and my brave companions. I especially thank you for this distinction, because it is significant evidence that the British Medical Association, at any rate, approved of my endeavors to carry out the teaching and the training and the principles for which I am indebted to the profession. I will not occupy you very long, as I expect that since Stanley's book has been published, most of you have crossed Africa in much quicker time than I did. However, a few details can bear repeating. One of the brightest features in connection with the expedition was the good feeling which existed amongst the Europeans and amongst Europeans and blacks. We were all strangers at first, but when we emerged from Africa, after three years' travels, we were the greatest friends. I have always received the greatest assistance both from my illustrious chief, Mr. Stanley, and from my companions. Our mortality was very great, especially amongst the blacks. The Europeans were particularly fortunate; out of twelve ten emerged out of Africa safe and sound. Of the two who died one was murdered, and the other died about 600 miles away from us. Amongst the black people we only brought back about 300 out of 700. There was a great difference between the blacks and the whites during the starvation period—the period of greatest trial. The white people seemed to get along much better; they had more moral pluck and more energy; they seemed to have more to live for than the black people, who showed very little resistance. The object of the expedition was the relief of Emin Pasha, and it has been successful. We found Emin Pasha. After five months' and a half marching we reached the objective point, which was the Albert Nyanza, and by that time we had lost 50 per cent. of our men. However, we came to the lake, and found Emin Pasha, and brought him to the coast. I will not detain you by entering into any further details, excepting to say that you know what has happened since—how he fell out of a window on the coast. He had not been in a two story house for fourteen years, and thinking he was going out at the door, he walked on the veranda, and fell down and broke the base of his skull. You also know what has happened to Mr. Stanley. I left him the other day in the best of spirits, and as happy as the day is long. My other companions also are in the best of health. Passing through Africa we came across different tribes, and found the country to be beautiful and fertile, the interior being like a garden.

Some of the tribes were extremely handsome, with well-marked features, thin noses, thin lips, and high foreheads. No doubt, in a short time, Africa will be opened up to civilization. They are making three railways there—one south, one east, and one from the Congo—and those will be a great medium of civilization. Some of the tribes in the middle of Africa were considered to possess horrible and diabolical faces, but if some of the Wahunna ladies were introduced into England, I think there would be a great emigration of energetic and enterprising young men. Allow me again to thank you for this medal, which is second to no other decoration that I have received. I thank you most sincerely for it.—*British Med. Journal.*

THE GROUND-WATER AND DRINKING-WATER THEORIES OF THE ETIOLOGY OF CHOLERA.

The following is translated from the *Annales de l'Institut Pasteur*, and published in the *Abstracts of Sanitary Reports*, July 25:

The theories of the etiology of cholera, known as the ground-water theory and the drinking-water theory, and which are represented by the Berlin and Munich schools, continue to excite much controversy in Germany. The question of practice is the animating motive of the discussions. The theory, which attributes microbic disease to the transmission of germs by means of drinking-water, is clear, simple and definite in its indications, and consequently, in the prophylactic measures it suggests. The Pettenkofer or ground-water theory makes the evolution of a sporadic case or of an epidemic depend on a host of factors against which it is impossible to guard.

The city of Munich has a strong underlying body of subterranean water, the variations in the level of which are constantly in the numerous wells of the city. The epidemic at Munich, in 1854, was preceded by a remarkable elevation, and accompanied by as remarkable a depression of the level of this subterranean water. According to the ground-water theory, a close relation exists between these facts and the evolution of the epidemic. The variation of level allows the water to permeate the soil, which it leaves humid on subsidence.

The danger point is reached when the soil has attained the requisite degree of humidity. The cholera germ is innocuous when it leaves the human organism, and to infect another organism it must mature and complete a new phase of its existence outside of man and in a suitable medium. The medium is the soil, moist, aerated, and saturated with impurities.

The school represented by Koch objects to this, that the maturation of the cholera germs in the soil is purely subjective, and that none of the pathogenic germs known offer any parallel to the conditions claimed for the germ of cholera. The germs of small-pox and scarlet fever pass directly from one patient to another, and one individual may initiate an epidemic. The bacillus anthracis is not only virulent when it leaves the organism of the animal whose life it has destroyed, but its virulence is increased by transmission through the same species, as has been demonstrated by the studies in septicæmia made by Coze, Feltz and Davaine. It is true that anthrax is sometimes of telluric origin, and Koch

has shown by what means the virulent microbe is conserved, but there is a vast difference between the possibility of the conservation of the bacillus in the soil, and the necessity for it to pass through the soil for it to become virulent. It rests with the advocates of the ground-water theory to show the mechanism for the exodus of the morbid influence from the soil.

Vogt attributes its liberation to oscillation in the pressure of the atmosphere and the expulsion has been accounted for by an elevation of the subterranean level. But Noegeli, Pumpelly, Renk and Miquel have shown that passage through a layer of humid earth filters a current of air, instead of charging it with germs.

When the soil is dry the air current may take up dust in which there are germs, and attrition under the influence of sun and wind may create whirlwinds of dust, the respiration of which is dangerous. But in this case the microbe must support dessication, and supposing it retained, living and virulent in the air, the means by which it is introduced into the human organism are left undetermined. The way of pulmonary inhalation must be rejected.

Cholera, as at present understood, is localized in the intestinal canal. The germs might be arrested by the saliva and conveyed to the stomach, but Koch has shown that they can support only a short stay there. The advocates of the ground-water theory, however, accept penetration of the germ into the organism by way of the saliva and reject the transmission by food and water.

Dr. Hueppe, in a recent work, has undertaken to find a common ground on which the two theories may meet. His conception is that the cholera bacillus may, like most pathogenic bacteria, exist in the saprophytic state. Frankel has demonstrated that it finds in the superficial layers of soil the necessary conditions of temperature, that it resists dessication and putrefaction and the rivalry of other species.

It leaves the soil, not matured, as Pettenkofer claims, but vigorous and capable of resisting the action of the gastric juice, when by deglutition of saliva, respiration, drinking water, or alimentary substances it has reached the stomach. It develops in the intestinal canal, producing the toxic agents that impart to cholera its frightful character. When it leaves the human organism it ceases to be infectious and recovers its virulence by contact with the air or in the soil. If air and oxygen are deficient the germ perishes. If both are present in small quantities it can lead an aerobic existence at the expense of the materials it encounters.—*Sanitary News.*

LEGISLATION FOR LEPERS.

A telegram from Calcutta states that the question of the proper housing and care of lepers is attracting much attention. A public meeting has been held at Bombay and a committee appointed to frame a scheme. The subscription already promised exceed 12,000 rupees; the Governor has headed the list with 1,000 rupees. The Calcutta Health Society has addressed the Government urging the necessity of legislation, and pointing out that all leper asylums should be scientifically regulated, and should be under Government control.

PRACTICAL NOTES.

JACCOUD'S NUTRITIVE ENEMA.

An enema of great nutritive power, and valuable in cases of cancer of the stomach, closure of esophagus, etc., is produced by M. Jaccoud as follows:

- R. Beef broth (freshly made), 8 ounces.
Wine, 4 ounces.
Yolks of eggs, 2.
Dry pepton, 1 to 4 drachms.

℥. Sig.: Mix and make an enema to be injected in small portions at intervals during the day.

ANTISEPTIC LIQUID.

The following formula is in use in some of the hospitals and dispensaries as an antiseptic dressing.

- Boric acid, 240 grains.
Salicylic acid, 30 grains.
Water, 2 pints.
Dissolve.

THE NEW METHOD OF TREATMENT IN ERY-SIPELAS.

1. *Method of Rosenbach*.—Consists in first washing with soap not only the affected part, but the surrounding healthy skin, then applying each day a solution of carbolic acid (5 per cent.) dissolved in absolute alcohol. Results, very brilliant as regards both the progress of the malady and the febrile phenomena. The use of absolute alcohol by itself has also produced favorable results.

2. *Method of Nolti*.—The affected parts and surrounding skin are covered twice daily with mucilage of gum arabic, mixed with from 3 to 5 per cent. of carbolic acid. Good results. Dr. Ebstein mixes the carbolic acid with vaseline.

3. *Method of Koch*.—By means of a soft brush, we apply a thin and regular covering of the following pomade:

- R. Creoline, 1 gram.
Iodoform, 4 grams.
Lanoline, 10 grams.

The parts are then covered with leaves of guttapercha. This has given good results, especially in erysipelas of the face and head.

4. *Method of Nussbaum and Brunn*.—Ichthyol with or without collodion. Results favorable, and very prompt.

5. *Method of Hallopeau*.—A solution of 1 to 20 of salicylate of soda is soaked in a mask of several thicknesses of linen and applied over the parts, after which it is covered with rubber bands, to prevent evaporation. Relief almost immediate; cure in from three to five days.

6. *Method of Hueter*.—Injections of carbolic acid in the healthy skin, in doses of from 10 to 15 grams distributed in several punctures, at 1 or

2 cm. from the edges of the affected parts, with the following solution, recently prepared:

- R. Carbolic acid (pure).
Absolute alcohol, 50, 3 grams.
Distilled water, 94 grams.

Very painful. Only applicable in severe cases of the head or face.

7. *Method of Kraske*.—Scarify the edges before application of the antiseptic substance. Dr. Lawenstein advises that the incisions should be made exclusively in the healthy skin, after which the parts are enveloped with a solution of carbolic acid or sublimate.

8. *Method of Wolfer*.—Mechanical compression by means of adhesive plaster applied on the healthy skin on the borders of the affected parts, so as to completely surround them.—*Le Bulletin Medical*.

RESORCIN IN EPITHELIOMA OF THE FACE.

Dr. Mario Luciani reports two cases of "cutaneous epithelioma" in which he claims to have effected a complete cure by the application of an ointment containing resorcin. In one case the patient, a healthy woman, æt. 54, had had a small red nodule on the forehead for four years. It then began to grow larger, and became ulcerated, the ulcer having hard borders and a foul base, and being very painful. As the disease was spreading and the patient would not hear of anything in the nature of a surgical operation, Dr. Luciani directed that an ointment composed of 30 grams of resorcin to 100 grams of vaseline should be applied once a day to the ulcerated surface after previous cleansing with a 2 per cent. watery solution of borax. In a month the ulcer assumed a healthy appearance, its edges softened, and the burning and shooting pain formerly complained of ceased. After three months' further continuance of the treatment the ulcer completely healed. The second patient was a woman, æt. 60, who for about a year had noticed a small lump on her upper lip near the corner of the mouth on the right side. Ulceration took place, and the course of events was similar to that in the previous case. The same treatment was followed by an equally happy result. While Dr. Luciani is to be congratulated on his success, some doubt may, perhaps, in the absence of microscopic or other conclusive evidence, be expressed as to the true nature of the disease with which he had to deal.

BOROGLYCERIN CREAM.

The following preparation is said to be excellent for chapped hands, lips, etc.: Dissolve one part of boric acid in twenty-four parts of glycerine; add to this solution five parts of lanolin free from water, and seventy parts of vaseline. The preparation may be colored and perfumed.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR REGULAR CORRESPONDENT.)

Influenza an old acquaintance in Ireland—Alarms of Cholera—Asepsis of Catheters—Death of Sir William Hoffmeister—Sanitary Condition of Workmen's Dwellings in Liverpool—A New Way of Committing Suicide.

Influenza, according to the Irish Local Government Board, is an old acquaintance in Ireland. A passage is quoted from the "Annals of Ulster," A.D. 1326: "Awful thunder and lightning this year which destroyed the corn and produce of Erin so that it was blighted and waste. An epidemic disease common throughout all Erin which was called 'Staedan' (prostration), which affected during three or four days every person so that it was second only to death." In 1328 influenza is recorded under the name of "staedan" in the "Annals of the Four Masters" and in the "Annals of Connaught," and under the name of "Murre" in the "Annals of Clon Machoire." Several outbreaks of influenza are mentioned in the fourteenth century in Ireland. In 1850 the same disease is described as a strange kind of sickness called "the gentle correction" or influenza.

Alarms of cholera keep continental countries on the alert. Paris was desperately frightened by the announcement of a suspicious case, which had ended fatally and seems to have been ordinary, not Asiatic, cholera. Five cases of cholera nostras occurred at a village near Pesth with one death, and eleven Mecca Pilgrims have succumbed to the true cholera on the Red Sea. The epidemic affects Mesopotamia and is very severe round Baku, on the Caspian Sea, where seventy deaths are reported, the disease being aggravated by the terrible heat. Extreme heat prevails throughout South Russia, so that the authorities are in daily dread of the epidemic appearing.

The subject of asepsis of catheters has been occupying attention. The questions taken into consideration are whether it is always necessary and the dangers to which its neglect may give rise, and, secondly, by what means the asepsis may be best and most easily brought about. The first proposition is considered incontestible. It is generally admitted that though catheterism may be practiced for a considerable length of time without any special precautions as regards perfect asepsis of the instrument and without any ill consequences following, yet such facts should not promote the idea of perfect innocuity. The general complications which appear in the course of catheterism are thought not to be well understood. The urinary fever in its varied types—that of acute frank access, similar to the access

of an intermittent, or the slow fever of the continuous type—is attributed generally to the absorption of decomposed urine, or by another theory, to a reflex congestion causing arrest of the renal secretion. Dr. Picard gives it as his opinion that all these accidents are caused by infection of the urinary tracts and are due to want of cleanliness of the instruments employed, and contends that with proper care a clean aseptic catheter, no matter how often used, never occasions purulent cystitis, urethritis, orchitis, urethral abscess or urinary fever. With regard to the means to be employed to secure asepsis, Dr. Picard confines himself to those easily realized by the general practitioner. Metallic instruments are those which are the most readily disinfected. Boiling in water or in salt water is regarded as giving the necessary security. Soft or semi-soft instruments are now usually employed and require greater care. The soft red caoutchouc Nélaton sound he dips for a few seconds into boiling water or keeps it constantly in a strong antiseptic solution such as a 5 per cent. carbolic or 1 per 1000 sublimate solution, and washes the instrument thus kept in strong antiseptic solutions before using, either in boiling water or in a solution of boracic acid. After boiling, the instrument may be taken up by a clean forceps and placed in a jar containing a saturated solution of boracic acid. A thread previously fastened to the end of the catheter is slipped into a slit in the cork and the instrument is suspended and can be readily withdrawn without handling when required for use. Semi-soft gummy catheters are found not to be so easily sterilized. Dr. Picard places such an instrument in a tube whose open end is then filled with absorbent cotton wool. The tube is then placed in boiling water and allowed to remain there at least half an hour. This process is repeated several times at intervals of twenty-four hours, for while this temperature of 100°C. destroys adult bacteria it is without effect upon the spores or germs.

The death is announced of Sir William Hoffmeister, for many years surgeon to the queen, the Prince of Wales and the royal family in the Isle of Wight, which occurred at his residence at Cowes after a long illness. He was Honorary Consulting Physician to the Royal Isle of Wight Infirmary and Surgeon to the Royal Yacht Squadron.

Dr. Hope, in his inaugural address to the Society of Medical Officers of Health, said that the corporation of Liverpool possessed a block of workmen's dwellings, known as Victoria square, which were second to none in the kingdom. The buildings, which provide accommodation for a thousand persons, occupy a part of a site on which formerly 1,300 persons were living under the worst sanitary conditions. They are five floors in

height and are divided by party walls into thirteen separate sections, two of the blocks have shops on the ground floor, and the remainder are entirely devoted to dwellings. Each dwelling has a separate entrance from the common staircase and is a tenement in itself. There are altogether 271 tenements and a superintendent's house. The water-closets are two on each floor for the joint use of the four tenements. They are thoroughly disconnected from the tenements and are of approved sanitary construction. The dust and ashes are disposed of through a ventilated shoot formed in the angle of the lobby leading to the water-closet, which appears to answer well; ordinary bins are provided for other refuse. Each tenant has the sole use for a fixed day of a spacious laundry appropriately lighted and fitted up, placed centrally on each floor for the use of the four tenements on that floor. On each side of the laundry is a scullery with double sink, one sink for each tenant. The interior of the tenements is attractive and cheerful, the walls are plastered and finished in distemper, the necessary cupboards, drawers, bunkers, etc., are provided. The windows are divided into small squares, the lower portion having tinted glass. They are fitted with stained and varnished venetian blinds. Sewerage and drainage have received the closest attention. The rents charged vary from 6s. per week for the three-roomed tenements to 2s. per week for the one-roomed tenements. There has been a great improvement in the death-rate.

A strange attempt at suicide is recorded. At Earlbourne, in Sussex, a tradesman was charged with attempting to kill himself by driving four long nails into his head. A medical man produced four long nails which he had with great difficulty withdrawn. These nails had penetrated three inches and entered the brain, but to the surprise of the medical staff at the Memorial Hospital the man had fully recovered. The would-be suicide said he drove the nails into his head in succession and that he had felt better since the occurrence. He is now sane and able to attend to his business.

Dr. T. Lauder Brunton delivered an address on Chloroform Anæsthesia before the Section of Pharmacology of the International Medical Congress in Berlin, and Mr. Alban Doran was appointed English Secretary to the Section of Obstetrics and Gynecology at the same meeting.

G. O. M.

BACCELLI will probably be the President of the next International Medical Congress which will be held three years hence in Rome. As Rome is too hot and not altogether healthy for foreign visitors in early August, the meeting will probably be held at the end of September.—*British Medical Journal*.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Opening of the new Croton Aqueduct—The Election at Auburn—Important recommendation of the State Commission in Lunacy—What the Vanderbills are doing for the Workingmen of New York—The Rev. Chas. L. Brace and the Children's Aid Society of New York.

In the last letter a brief reference was made to the opening of the new Croton aqueduct; but this is a matter of so much importance to the health and prosperity of the community, that a more extended notice of this great undertaking may be of interest. The opening took place on the 15th of July, and was without public ceremonies, though the Mayor and other city officials were invited to be present when the water was first turned on at the big reservoir in Central Park. This is in marked contrast with the opening of the old Croton aqueduct, which was made the occasion of a general celebration, with elaborate exercises and marked demonstrations of rejoicing everywhere in the community.

The new aqueduct is unquestionably the greatest engineering work of the kind ever undertaken and successfully carried out. Through nearly all its course from Croton Lake to the gate-house at 135th street, it is a tunnel through solid rock, sometimes more than 200 feet below the surface of the ground; and, instead of crossing the Harlem River by the simple device of iron pipes carried on a bridge of masonry, the tunnel takes the form of an inverted syphon below the river's bed, going to a depth of 300 feet to find secure rock to withstand the tremendous pressure. The aqueduct, as has been stated in *THE JOURNAL*, is capable of delivering two hundred and fifty million gallons of water per day, or nearly three times as much as the old one; while its cost has been less than twice as much, without taking into account the additional storage reservoirs that will be required to afford a steady supply of water. This is not only by all odds the largest aqueduct, but it is also the longest continuous tunnel, in the world; and when the dams and reservoirs subsidiary to its full and permanent operation are completed, the system of waterworks will be the most extensive and costly ever constructed. It was, therefore, altogether appropriate that, on the day of the opening, the Aqueduct Commissioners should adopt the following resolution:

"Resolved, That as our citizens enjoy to-day, by the utilization of the new aqueduct for the first time, the benefits of an undertaking which stands an unparalleled monument to engineering skill, and which in every way contributes to our city's health and welfare, the members of this Commission warmly congratulate the public of the City of New York upon the virtual fruition of an enterprise of such incalculable magnitude and merit."

The main trouble for years has been, not a lack of water at the source of supply, but a lack of means for bringing it to the city. Most of the time the reservoir, or lake, at Croton village, has been overflowing, and the supply has gone to waste over the dam. The means for bringing the water to the city in ample quantity is therefore now provided. The natural supply, however, is unequally distributed through the year, and in order to get the full benefit of it, there must be sufficient storage capacity in the reservoirs to hold the surplus of wet periods for use in dry periods. Otherwise, a prolonged dry period would be perilous to the city's supply, and the aqueduct, alone—although entirely satisfactory in time of abundance—would be useless. Hence the absolute necessity of providing storage facilities in the Croton Valley commensurate with the aqueduct facilities afforded. The work of providing for the city's future needs will not be finished, therefore, until means have been adopted for storing the entire supply of the Croton watershed, in order that its distribution through the aqueducts may be equalized, not only throughout the months of each year, but through the succession of wet and dry years.

The capacity of the present Croton Lake is about nine million gallons, and subsidiary reservoirs further up the valley will more than double the provision for storage. But this will be insufficient either to receive the full supply or to hold back enough to provide against a protracted dry period. A dam will therefore be required in the lower part of the valley which will raise the capacity of the main reservoir to thirty million gallons; and this the great "Quaker Bridge dam," which is in contemplation, but which has not yet been definitely decided upon, would accomplish. The construction of such a dam is unquestionably essential to the completion of the system that will enable the city to make use of the entire Croton water supply. With it and the new aqueducts, New York will be amply provided for water until such time in the future when the increasing growth of the city will render it necessary to seek for a new source of supply.

The electrical execution at Auburn has naturally been the subject of universal attention of late. While many of the highly colored newspaper reports of it have been filled with all sorts of sensational horrors, there can be no doubt that this initial trial of the method, although managed apparently in a somewhat bungling manner, was entirely successful in producing death without pain to the subject. It cannot but be admitted, however, that the apparatus employed was defective, and that it did not work properly. For months strenuous efforts had been made in the interest of the electrical company whose dynamo was to be used to prevent the execution of the law in Kemmler's case, and the warden of Auburn

prison was seemingly in sympathy with these efforts. This has for the most part been attributed to his repugnance to the unpleasant duty that was to fall to him in being the first to execute a death sentence by the new process, but the tinkering with the apparatus, and the change of the fatal chair from one room to another at the last moment, without apparent reason, gave a suspicious appearance to the final preparations.

Wherever the trouble may have been, it is clear that the arrangements were bad. It was the opinion of the experts consulted on the question that, to induce certainty in instantaneously producing death, a current of from 1,500 to 1,800 volts should be used. That employed in this instance, however, seems to have varied in a very uncertain way from 700 to 1,300, and never to have risen above the latter figure. While the current was weaker than it should have been, the contact of the electrodes seems to have been imperfect. Moreover, the dynamo was a thousand feet away from the death chair, instead of being close at hand, and the system of signaling to the man in charge of it appears to have been clumsy or misunderstood in the working. Whether death was produced by the first passage of the current for seventeen seconds or not, there can be no question that the man was instantaneously rendered unconscious by its force. As certain movements were noticeable in the body after the current had been stopped, however, it was certainly very proper that it should be turned on again, and continued until there could be no possible doubt of his death. The first trial of execution by electricity was of necessity an experiment, and it was not conducted with that care and coolness that were requisite to insure perfect success. But it was made clear that, with the current that has been recommended for the purpose, with appliances free from defect in construction and operation, and with a firm and confident application of the process, there could hardly be any question of instant and painless death.

If the law requiring infliction of the death penalty by electricity is to continue in force, it would probably be advisable that it should be so modified as to provide but a single place in the State for such executions, instead of three, in order that the best possible chances for the successful application of the method might be afforded. As Dr. Shrady, editor of the *Medical Record*, who was one of the physicians present at the execution, states, the experiences in the Kemmler case have shown many difficulties in the way of a general adoption of the method of killing by electricity. "It is," he says, "far from being simple in its application. It requires careful and elaborate preparation. It multiplies machinery which, without expert manipulation, is liable to fail in its working and bring about disastrous results. It may be a source of danger to the exe-

cutioners and spectators." It is interesting to note that more than half an hour after the current was turned off the temperature of Kemmler's body, taken at the back of the neck, was 1° higher than ordinary blood temperature. In consequence of this, although all the physicians present concurred in the opinion that the man was positively dead, the autopsy was very properly postponed for three hours, as it was desired that no ground should be afforded for the slightest suspicion that he died under the scalpel, and not from the electric current. On removal of the skull cap the dura was found normal in texture, somewhat dull in color, particularly over the area corresponding with the zone of contact. In the pre-Rolandic region the meningeal vessels, over a considerable surface, were filled with carbonized blood, while on the internal aspect of the calvarium the meningeal vessels in the dura appeared to be black and carbonized. The carbonized vessels were so brittle that their ends were torn off with the calvarium, and presented a broken, crumbly appearance. This carbonization was limited in an abrupt manner, and the other meningeal vessels contained blood of a crimson-like hue corresponding to the outer burn produced by the current. Over the left hemisphere, $\frac{1}{4}$ of an inch to the left of the median line, there was a deep carbonized spot, corresponding with the carbonized portion of the calvarium. On handling the pons and medulla they were found to be warm, and by a thermometer inserted in the fourth ventricle the temperature was noted at 97° F. This corresponded with the area of temperature on the back of the neck, which was noted at 99° two hours after death, and 97.5° three hours after death. Capillary hæmorrhages were noted in the floor of the fourth ventricle, in the third ventricle, and in the anterior portion of the lateral ventricle; while the perivascular spaces appeared to be distended with serum and blood. The brain cortex in the area of contact was sensibly hardened to one-sixth of its depth, where there was a broken line of vascularity; but the spinal cord showed no gross appearances of pathological condition. The blood taken immediately after death showed under the microscope a markedly granular condition, almost suggesting an electrolytic dissolution of the red corpuscles.

At its last quarterly meeting, recently held in Albany, the State Commission in Lunacy, as the result of a systematic visitation of the various State hospitals for the insane, adopted a series of important recommendations for the prevention of fires in these institutions, and for the safety of the patients in case of the occurrence of fire. If these regulations were in force in insane asylums generally, it is safe to say that disastrous fires would not occur in them so frequently as is now the case.

Mr. Cornelius Vanderbilt, while in London during the early part of the summer, made a thorough

inspection of the People's Palace there, and in conjunction with his mother, Mrs. Wm. H. Vanderbilt, has just commenced the erection of a popular club-house and mission building which will embody many of the most useful and attractive features of that admirable charity. It is to be known as St. Bartholomew's Mission, and its general direction will be under the management of St. Bartholomew's Church, which the Vanderbilt family attend. It is especially designed for the use of the large tenement-house population residing to the eastward of the Grand Central Railway Station, and the building is to be six stories in height, with a frontage on Forty-second street of 75 feet, and a depth of 100 feet. In the basement there will be a very large swimming bath, with a heating apparatus to warm the water in winter, and it will be for the use, at different hours, of both males and females. On the same floor there will also be a kitchen and large dining-room, and a workroom where unskilled laborers who are out of employment can obtain temporary work. One of the floors is to be fitted up and fully equipped as a first-class gymnasium; and on the various other floors there will be a large chapel, a number of rooms for meetings, lectures and entertainments, sewing-rooms, rooms for boys' clubs, an extensive library and reading-room, etc. The cost of the whole will be over \$250,000, and altogether St. Bartholomew's Mission will be an institution which cannot but have a most salutary effect upon the physical, mental and moral welfare of the poor people in whose midst it is situated.

Among the various charities of the city there is none that is deserving of more unstinted praise or that has accomplished a more noble and extensive work, than the Children's Aid Society, and the sad news has just been received of the death, in Switzerland, of the Rev. Charles L. Brace, the founder and Secretary of the Society. While traveling in Europe some forty years ago, he made a study of the management of the schools, the prisons and the reformatory institutions in various countries; and he was especially impressed with the work of the Rauth Haus in Hamburg, and the Ragged House in London. When he returned to America he was filled with the subjects which he had lately been studying, and his attention being naturally turned to the condition of the tenement districts and of the immigrant poor in New York, early in 1853 he succeeded in interesting a large number of philanthropic people in the organization of the Children's Aid Society.

The great idea in Mr. Brace's work was to enable the young to help themselves, and since the organization of the Society more than 70,000 children have been placed in good homes in the country, many of them in the West; a large number of them having now grown up as useful and worthy citizens. Another feature of the work

was the establishment, in various parts of the city, of lodging-houses for boys and girls, and the books show that more than 200,000 young people have availed themselves of the comforts of these lodging-houses since they were started. Mention should also be made of the industrial schools, the summer homes for infants and young children, and the medical service among the tenement population which the Society has organized and maintained.

The first examinations for both law and medical students, under the new law, will be held at the College of Physicians and Surgeons the latter part of September; all such students not holding a college degree being required to pass a preliminary examination of substantial equivalents.

P. B. P.

The New York State Examination Act.

To the Editor:—Under the above title a correspondent of *THE JOURNAL*, Dr. Alfred Ludlow Carroll, of 30 West Fifty-ninth street, New York—we cheerfully give his name and address in full—offers extended criticism in your issue of August 23, 1890, of the recent statute enacted by the legislature of this State creating boards of medical examiners for the license to practice.

In the third paragraph of this singularly clear, logical and concise communication occurs one sentence to which I beg briefly to reply. It is worded as follows:

According to its report for 1889, its members numbered less than 200. . . . Yet from this small circle are to be exclusively appointed the arbiters of questions which concern the whole profession throughout the United States.

This refers to the Medical Society of the State of New York, which by the statute above referred to, is charged with the duty of nominating to the Regents of the University one of the boards of medical examiners to be created.

The Medical Society of the State of New York derives its members from the county medical societies, the New York Academy of Medicine,¹ and the incorporated medical schools, which send delegates to the State society; these delegates, after having served three years as such, during which time they must have attended at least two annual meetings, become eligible to permanent membership. The number of permanent members in 1889 was 194, and in 1890 it had increased to 229, besides 33 retired permanent members. The number of delegates provided by law is 145; this would give an aggregate of 374 members entitled to vote at any meeting on any question. It is safe to say that these 374 votes represent a constituency aggregating upwards of 4,000 physicians. For various and obvious reasons not all

of these voters can attend every meeting; at the meeting of 1889, 82 delegates and 92 permanent members were in actual attendance—a safe proportion of the whole, one would say, to act upon any question.

I have already said enough to show the basis of the organization of the Medical Society of the State of New York—a plan which has received editorial commendation in a recent number of *THE JOURNAL*. This much seems due to your readers, lest they infer from the paragraph quoted from your correspondent that it was “a small circle,” and not a representative body deriving its powers from a large constituency, that should nominate the board of medical examiners “which concern the whole profession throughout the United States.” This has been substantially the plan of its organization since its charter was granted by the legislature in 1806. It is a society created by law, recognized by its statutes, and acting within its limitations.

With the other questions so ably discoursed upon by your correspondent I have not thought it proper to deal at this time. The Regents of the University surely are competent to defend themselves, and a trial of the law will demonstrate its efficiency or the reverse; then, if need be, discussion in regard to amendments will be in order.

WILLIAM WARREN POTTER.

284 Franklin street, Buffalo, N. Y.

BOOK REVIEWS.

CHEMISTRY, ORGANIC AND INORGANIC, WITH EXPERIMENTS. By CHARLES LOUDON BLOXAM. Seventh Edition, Revised and Edited by JOHN MILLAR THOMSON, Professor of Chemistry, Kings College, London, and ARTHUR G. BLOXAM, Demonstrator of Chemistry, Royal Agricultural College, Cirencester. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut street. 1890.

The seventh edition of this familiar text-book is now presented to the public. A thorough revision of the work has been made. In order that it might fully represent the latest advances in chemistry, much of the matter has been re-written. In each department there is a vast amount both of theoretical and practical instruction. This is especially true of the chapter which treats of the metals.

The latest views with reference to organic chemistry have required that this part of the work should be materially revised, and the chapter upon the chemistry of vegetation is entirely re-written. The “new remedies” find their appropriate places in the text, and add value to the work. Much of valuable instruction is contained in the closing portion of the work, which treats

¹ The New York Academy of Medicine 5 delegates, the incorporated schools one each, and the county societies one for each assembly district.

of "the useful application of the principles of organic chemistry."

It is a substantial, finely printed and illustrated work, suited alike for the library and the laboratory. For sale by A. C. McClurg & Co., 117-121 Wabash avenue, Chicago. Price, \$4.50.

A MANUAL OF ORGANIC MATERIA MEDICA.—

Being a guide to Materia Medica of the Vegetable and Animal Kingdoms, for the use of Students, Druggists, Pharmacists and Physicians. By JOHN M. MAIRCH, Ph.M., Ph.D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Fourth edition, with two hundred and fifty-nine illustrations. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co. Price, \$3.00.

Three editions of this work have been exhausted within the last eight years, and this, the fourth, is required to meet the continued demand. Prof. Maich is so well known to students, pharmacists and physicians that his work has little need of commendation. The physical characters of drugs are well described, but the more important feature, and which gives special value to the book, is his effort, so far as present experience will permit, to clearly set forth the medical properties of the proximate principles of medicines, and to clearly set forth the effects of solvents in order to determine for each its proper menstruum, and also to carefully avoid incompatibilities. The work bears evidence of careful revision, and contains the results of the latest investigations in this important branch. The materia medica of the western continent will yet require a vast amount of careful investigation, and the present work is of special value in this field.

MISCELLANY.

TOMATOES AS FOOD.—A somewhat enthusiastic discussion is going on as to the alleged great value of the tomato as food, and its alleged influence on dyspepsia and liver complaints. All this is in a measure apocryphal, but that tomatoes, whether cooked or uncooked, but especially uncooked, form a very wholesome element in diet is unquestionable. No doubt where it is possible to follow the advice of growing your own tomatoes as well as eating them, the necessary outdoor exercise in gardening involved is excellent, and we endorse the advice: Grow your own tomatoes and eat them, if you have a garden.—*British Medical Journal*.

LETTERS RECEIVED.

Dr. A. B. Brackett, Goldfield, Ia.; J. F. Madden, New York; Dr. W. M. Findley, Altoona, Pa.; Alice L. Smith, Boston; Dr. F. R. Zeit, Medford, Wis.; Dr. J. N. Eldred, Chesaning, Mich.; Dr. C. A. Jessup, St. Louis, Mo.; Dr. W. Eustis, Farmington, Minn.; New York Pasteur Institute; Dr. J. H. Eskridge, Chicago; Dr. J. R. Barnett, Neenah, Wis.; Dr. M. G. Koll, Cleveland, O.; Dr. C. L. Hatfield, Farmer City, Ill.; J. H. Chambers & Co., St.

Louis, Mo.; Dr. G. W. Galloway, Findlay, O.; Dr. R. J. Duglison, Philadelphia, Pa.; Galvano Faradic Mfg. Co., New York; J. Walter Thompson, New York; Geo. S. Davis, Detroit, Mich.; Dr. Wm. B. Atkinson, Philadelphia, Pa.; E. Steiger & Co., New York; Henry Bernd & Co., St. Louis; Dr. C. L. Kinnaman, Cleveland, O.; Dr. C. R. Schaefer, Indianapolis, Ind.; Dr. C. W. Richardson, Washington; R. W. Gardner, New York; Dr. D. B. Collins, Madison, Wis.; Geo. Herbein, Ph. G., Denver, Col.; Dr. J. D. Scouller, Pontiac, Ill.; Dr. Wm. B. Davis, Cincinnati, O.; Dr. W. H. Johnson, Dudley, Pa.; Dr. J. B. Burnett, Newark, N. J.; Dr. W. L. Bullard, Columbus, Ga.; Dr. F. W. Hays, Indianapolis, Ind.; Dr. J. T. Jelks, Hot Springs, Ark.; Dr. M. H. Garten, Lincoln, Neb.; Dr. J. B. Matteson, Brooklyn, N. Y.; Miss L. Brittain, Cincinnati, O.; Dr. Richard H. Harte, Philadelphia, Pa.; D. R. Craig, Keokuk, Ia.; Dr. J. E. Boylan, Cincinnati, O.; Dr. A. B. Patterson, Atlanta, Ga.; Dr. W. F. Rochelle, Jackson, Tenn.; Parke, Davis & Co., Detroit, Mich.; W. P. Cleary, New York; Dr. T. E. Cunningham, Cambridgeport, Mass.; Dr. W. C. Hamilton, Philadelphia; Dr. H. H. Peachy, Loveland, O.; Chas. H. Phillips Chemical Co., Dr. C. H. Knight, New York; Dr. H. H. Roedel, Lebanon, Pa.; Dr. E. Chenery, Boston, Mass.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 16, 1890, to August 22, 1890.

Capt. George McCreeny, Asst. Surgeon, leave of absence granted by orders No. 84, Ft. Warren, Mass., August 15, 1890, is hereby extended fifteen days. S. O. 193, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, August 15, 1890.

By direction of the Acting Secretary of War, the retirement from active service this date, by operation of law, of Brigadier General John Moore, Surgeon-General U. S. Army, under the provisions of the Act of Congress approved June 30, 1882, is announced. General Moore will repair to his home, Bloomington, Ind. Par. 2, S. O. 191, A. G. O., Washington, August 16, 1890.

By direction of the Acting Secretary of War, First Lieutenant Charles F. Mason, Asst. Surgeon, is relieved from further temporary duty at Ft. Logan, Col., and will report for duty at his proper station (Ft. Washakie, Wyo.). Par. 3, S. O. 191, A. G. O., Washington, August 16, 1890.

By direction of the Acting Secretary of War, a board of medical officers, to consist of: Major Joseph V. D. Middleton, Surgeon; Major Clarence Ewen, Surgeon; Captain William E. Hopkins, Asst. Surgeon, will assemble at the U. S. Military Academy, West Point, N. Y., at 11 o'clock A. M., August 27, 1890, or as soon thereafter as practicable, to examine into the physical qualifications of the candidates for admission to the Academy. Par. 1, S. O. 192, A. G. O., Washington, August 18, 1890.

Capt. Walter Reed, Asst. Surgeon, is granted leave of absence for four months, to take effect about September 1, 1890. With the approval of the Acting Secretary of War. Par. 17, S. O. 192, A. G. O., Washington, August 18, 1890.

PROMOTIONS.

Asst. Surgeon Francis J. Ives July 25, 1890: To be Asst. Surgeon with the rank of Captain, after five years' service, in accordance with the Act of June 23, 1874. A. G. O., Hdqrs. of the Army, Washington, August 11, 1890.

First Lieut. William P. Kendall, Asst. Surgeon U. S. Army: To be Asst. Surgeon with rank of Captain, after five years' service, from August 12, 1890. A. G. O., Hdqrs. of the Army, Washington, August 18, 1890.

RETIREMENT.

Brigadier General John Moore, Surgeon-General, August 16, 1890 (Act of June 30, 1882). A. G. O., Hdqrs. of the Army, August 18, 1890.

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ORIGINAL ARTICLES.

FUNCTIONAL ALBUMINURIA ;

OR, ALBUMINURIA IN PERSONS APPARENTLY HEALTHY.

Read in the Section of Practice of Medicine, Materia Medica and Physiology at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 22, 1890.

BY WM. B. DAVIS, A.M., M.D.,
OF CINCINNATI, OHIO.

Mr. Albert M. came to my office, July 24, 1885, under a good deal of nervous excitement, and requested me to make a thorough examination of his physical condition. I asked him if he was sick? "No," he replied, "I am in perfect health, but I have just been examined for life assurance, and the medical officer has declined my application, because he says I have albumen in my urine, and he advised me to report the fact at once to my physician." I requested him to send me the following evening, three samples of his urine, voided an hour after each meal. I had been his family physician for ten years, and during that period, he had been apparently in the best of health. He had had no sickness, that I can recall, and had not lost a day from his business during that period. An American by birth, of German parentage, nervous temperament, spare build, æt. 30 years, abstemious in his habits, good moral character, married, prosperous in business. Proprietor and general superintendent of a large harness manufactory. Had scarlatina when a child; no history of rheumatism, gout, dyspepsia, or syphilis, in personal or family history; no distinct increase of vascular tension; no cardiac hypertrophy; and no retinal symptoms. Father died at 73 years of age, of bronchitis. Mother living, in good health, aged 71 years; brothers and sisters living, in good health.

My note-book reports the following results of the examination of his urine, tested by boiling and nitric acid :

July 25, 1885, 7 A.M. Color, dark straw; reaction, acid; spec. grav., 1.030. No albumen. No casts.

July 25, 1885, 1:30 P.M. Color, dark straw; reaction, acid; spec. grav., 1.030. Albumen, 1-12 bulk of test tube. No casts, but a few epithelial cells.

July 25, 1885, 6 P.M. Color, dark straw; reaction, acid; spec. grav., 1.030. No albumen. No casts.

A number of subsequent analyses were made with the same results, except that occasionally a trace of albumen was found in his evening urine.

Thinking that his diet had something to do with the production of the albumen, I questioned him closely as to what he ate and drank. He was a temperate man at all times, but occasionally took a glass of beer. I directed him to abstain from the use of beer, and all forms of alcoholic liquors, which he did. Then I directed him to omit eggs from his diet, then meats, then tea and coffee, then milk, and finally, I restricted him to toast and water for his morning and evening repasts, and a bowl of broth for his dinner. A careful examination of his urine, forty-eight hours after the elimination of each article of diet, convinced me that his food and drink had nothing whatever to do with the production of the albumen. I had him under close observation for seven weeks, during which time his appetite was good, digestion perfect, sleep profound, capacity for work excellent, and the albumen appeared in his noon urine with the regularity of clock-work. I had given him no medication, except some tinct. of iron, and I now dismissed him with the injunction to give no further attention to his urine as long as he felt well. I kept him under observation for the next three years, during all of which time he was in good health. October 20, 1888, I made a note of an examination of his urine, which gave the same results as the first report.

On April 1, of this year, I made a very careful urinalysis of his 24 hours' urine, examining separately each specimen as voided.

Whole amount, 40 oz.; reaction, acid; color, dark straw; specific gravity, 1.020; albumen, 0.012 per cent.; quantity of urea normal; no peptones.

Urine passed at 3 A.M. Color, dark straw; reaction, acid; spec. grav., 1.028. No albumen. A few hyaline casts, abundant oxalate of lime crystals, abundant mucus, and an occasional leucocyte.

Urine passed at 8:40 A.M. Color, pale straw; reaction, acid; spec. grav., 1.012. No albumen. No casts.

Urine passed at 1:30 P.M. Straw color; reaction, acid; spec. grav., 1.020. Albumen, 0.016½ per cent., a few hyaline casts, crystals of urates, occasional epithelial cell from bladder.

Urine passed at 8 P.M. Straw color; reaction, acid;

spec. grav., 1.020. A trace of albumen. No casts, occasional uric acid crystals.

Urine passed at 11 P.M. Straw color; reaction, acid; spec. grav., 1.025. Albumen, 0.025 per cent., a few epithelial and hyaline casts.

An examination of the 24 hours' urine, passed April 10, at same intervals, revealed the same quantity of albumen, but no casts; a few epithelial cells and uric acid crystals were observed in the 1:30 P.M. urine; specific gravity ranged from 1.022 to 1.030; quantity, 40 oz.; acid, reaction; dark straw color.

Five years have now elapsed since he became aware of the fact, that albumen appeared in his urine at stated intervals. During all of these years, he had not lost a day from his large and responsible business on account of personal illness; he had increased fifteen pounds in weight, and had been and still is in vigorous health. If he had not made application for life assurance, no one would have known that albumen appeared daily in his urine.

A physician of Cincinnati, M. Cassel, M.D., to whom I had made mention of the peculiarities of this case, subsequently had two similar cases come under his professional care, and he has kindly furnished me his memoranda concerning them. They may be stated in brief, as follows:

Both were apparently in good health, applied for life assurance, and were rejected because of albuminuria. In one the albumen was uniformly present in the afternoon urine, but absent in the morning. In the other it was observed only after indiscretions in diet, and champagne suppers.

During three years' observation they were not incapacitated from business, and were apparently in good health, although the albuminuria continued the same.

It is scarce more than a century since Cotugno discovered albumen in the urine, and only about sixty years have elapsed since a distinguished physician defined the clinical significance of albuminuria, and thereby attached his name to one of the gravest disorders that flesh is heir to. So profoundly and universally has the profession been impressed with the gravity of albuminuria, as defined by Dr. Bright, that its discovery was looked upon as the death-warrant of the patient in whom it appeared. After a time it was found that albuminuria was frequently present in pregnancy and the puerperal state, in zymotic and other febrile diseases, saturnine intoxication, impediments to the circulation, and other conditions. These discoveries qualified its significance somewhat, but did not materially alter the gravity of its presence in other cases. Then Finlayson, Mahomed, and other authorities demonstrated that Bright's disease may occur without albuminuria, and finally, during the past few years reports have appeared in the medical press, in both Europe and America, to the effect that albumi-

nuria has been detected in persons who were apparently healthy, and these reports have been confirmed by so many able observers that there seems to be no doubt of their correctness. In consequence of these qualifications it is now pretty generally believed that the significance of albuminuria, as first announced, was over-estimated; nevertheless its grave significance is so thoroughly ingrained in the profession that we can scarcely admit of any other condition than a pathological one as being compatible with its presence. Said a prominent physician in my presence quite recently, as he looked into a test tube and saw a precipitation of albumen: "My patient is doomed—there is his death-warrant," pointing to the albumen.

Edes states that the presence of albumen in minute traces, or something which gives a similar reaction with the most delicate reagents, is much more common than its absence, and the amount detectable by heat and nitric acid may be approximately stated as from 10 to 20 per cent. of persons examined. Leube found albumen in the urine of sixteen per cent. of 119 healthy soldiers; Munn found it in 11 per cent. of 200 apparently healthy persons who presented themselves for life assurance. He said that the albuminuria "was attended with no discomfort or unpleasant symptom, and with no discoverable cause for its existence." Mahomed found albuminuria in 15 per cent. of seventy-seven "practically healthy persons" examined for life assurance by him. Granger Stewart reports finding a general average of 31 per cent. among those examined by him. Capitan found in soldiers 45, and in children 89 per cent.; De la Celle says albumen is to be found at times in the urine of 76 to 100 per cent. of healthy persons, both young adults and children; and Prof. Senator says, "I should consider it not improbable that if we were to examine the urine for long periods, at different times of the day, and with care, we should sooner or later find it to contain albumen in the case of every healthy man."

It may be justly concluded from these reports and others that might be given that there are a large number of persons—apparently in good health—going about their business at the present time with albuminuria, and utterly unconscious of the fact. It is a matter of considerable importance to both the public and the profession to make ourselves fully and rightfully informed with regard to them, and of the full clinical significance of the albuminuria. The subject is yet comparatively new, and each case requires a separate and an attentive study, in order to enable us to recognize them when they may happen to fall under our view.

Great confusion exists with regard to the character and manifestation of this form of albuminuria. This is noticeable in the variety of

terms used by writers to designate the particular form or phase of it which has come under their observation. The following are a few which I have met with in our current literature, viz.: dietetic, non-organic, intermittent, remittent, recurrent, non-dangerous, paroxysmal, from muscular exertion, latent, simple, transient, postural, functional, physiological, cyclical, adolescent, mechanical, etc. It has been well said that these are terms permissible only so long as we remain unacquainted with the conditions which produce it. The term "functional" was originally applied by Prout to distinguish it from organic disease of the kidney. "Postural" was applied by Sterling because he observed in his cases that the albuminuria appeared on rising to the upright posture, and "may be made to disappear at any time by merely lying down." "Adolescent" was applied by Moxon because of its frequent observance in youth and early manhood. "Cyclical" was applied by Pavy because he had observed a diurnal variation of its appearance in the urine, of a more or less regular nature, and that which was observed one day was repeated with more or less closeness day after day for weeks, months, and even years. The term "functional" embraces all forms of non-organic albuminuria, and hence my use of the term in designating the class under discussion.

Stewart classifies functional albuminuria as follows, viz.: (1) Paroxysmal, (2) Dietetic, (3) Albuminuria from muscular exertion, (4) Simple persistent.

Moxon suggests two classes: (1) The albuminuria of adolescents, (2) Remittent. This latter class he divides into two groups: (a) Where there may be renal disease, and (b) where there is none.

Ralfe prefers the following classification: (1) Cyclical, (2) Paroxysmal, (3) Intermittent.

The case I have reported, it will be observed, corresponds to that class which Pavy has termed "cyclical albuminuria."

CAUSES OF FUNCTIONAL ALBUMINURIA.

A distinguished authority on the subject of albuminuria (Mahomed) stated that "although a large amount of attention has been devoted to the experimental investigation of the pathology of albuminuria during recent years, our knowledge of it remains very incomplete, and owing to the contradictory results that have been recorded, what little knowledge we possess appears uncertain." If this be true of the albuminuria of organic disease of the kidneys, how much more is it true of functional albuminuria.

From time to time it has been observed that a variety of causes may produce functional albuminuria, viz.: cold bathing, the ingestion of food, excesses in eating, drinking, and venery, vascular tension, particularly at puberty, passive

congestion, cold and wet, privation, depressing emotions, an elongated prepuce, skin disease, posture, prolonged brain work, severe physical exercise, hepatic complications, increased pressure and retardation of blood flow, mechanical pressure, etc. Schrieber has shown that compression of the thorax in young subjects for ninety seconds will cause it, and Ralfe observed that the weight of a soldier's accoutrements upon the chest may have been the cause in the production of albuminuria. The effects of over-study, combined with anxiety, very frequently produces it in candidates for graduation in our colleges. Prof. Ralfe said, "hardly a season passes but I am consulted by some student who has discovered albumen in his urine whilst reading for his examination, and of whom I hear no further when his troubles are over."

Various theories have been advanced to explain how albumen escapes into the urine in these cases. One states, "that it is due to changes in the secreting structures;" another ascribes it "to a weakened state of the renal vaso-motor centres, which are easily thrown off their balance by exaggerated physiological conditions." Sir Wm. Gull says that "it is due to atony of vessels and nerves." Bartels attributes it to an altered state of blood pressure. He says: "Perfectly healthy kidneys, solely in consequence of an altered state of blood-pressure upon their vessels, can excrete albuminous urine." He further states that the "albuminuria may arise as an entirely transitory symptom from abnormal elevation of the blood pressure, and pass off again as quickly as the cause from which it arose; but, on the other hand, this cause abiding, it too, may endure, and lastly, it may come and go, fluctuating with the varying grades of pressure which produced it." In all of these conditions, he says, the actual per cent. of albumen is but little. Prof. Semmola thinks that albuminuria, in its functional manifestations, is due to the presence in the blood of albumens of greater diffusibility than the normal blood albumen. Moxon and Collins attribute it largely to morbid matters in the urine, particularly oxalate of lime. While many other writers hold to the view that it is due to "changes in the kidneys, brought about by changes in the blood." These conflicting theories and confusion of terms make it apparent that we have made but little progress in our study of albuminuria since the time of Bright. We have learned that more than one form of albumen appears in the urine, and yet, we have blindly acted as though all forms have the same grave significance.

Stokvis, Brunton, Claude Bernard, and others have observed in the urine certain food albumens, generally classed as peptones, and Bruce Jones, Gerhardt, Green, and Bayton have described certain anomalous forms of albumen as occurring in

the urine, to which the terms of "hemi-albumose," "met-albumen," "leth-albumen" and "albuminose" have been applied. As far back as the year 1878, Prof. Moxon stated that it had been shown by experiment that "some albumens differ from other albumens in the tendency it shows to escape from the renal vessels after the manner of a thing excreted as unsuitable, and hence arose the recognition as probable of a certain incompleteness in the production of peptones or albuminous products of digestion, so that *abortive kinds of albumen* may be found in incomplete digestion, these abortive albumens filtering off through the kidneys and giving rise to albuminuria, which would be no sign of renal disease, but only a result of dyspepsia." After relating the various causes which observation has shown will produce temporary albuminuria, he says: "Albuminuria becomes in relation to disorders of the renal system what neuralgia is to disorders of the nervous system, or what dyspnoea is in disorders of the respiratory system—a *name of a symptom*—which is on the very outskirts of an intimate knowledge of the nature of any case, and thus albuminuria, as Dr. Bright knew it, becomes by-gone and historic." Gerhardt, in the year 1873, differentiated and distinguished albuminuria of fever from that which is strictly renal, and due to structural changes in the kidney. He concluded that the albuminuria of renal disease was serum-albumen, while the albumen incident to the febrile state represented the rapid disintegration of a great number of the red globules.

If we accept the theory that the urinary albumen comes from the blood, it would necessarily follow that more than one coagulable albuminous substance should pass into the urine, for the blood normally contains at least two such substances in solution, viz., the serum-albumen and the globuline. Prof. Senator says, "There is not the slightest ground for the assumption that always, and without exception, only one of these two substances, possibly the serum-albumen as generally supposed, escapes from the blood." Globuline is much more diffusible than serum-albumen, and consequently more capable of passing through a filter.

Bartels says, "Globuline can diffuse itself through animal membranes, and it ought to astonish us, that this substance, which is always contained in normal serum, should not, by reason of its property of diffusibility, pass over constantly into the urine of healthy persons."

Maguire reported three cases of cyclic albuminuria, in which the albumen consisted entirely of globuline. "The ratio of globuline to serum-albumen, was inversely proportional to the gravity of the case." Stokvis considers pathological albumen to be serum-albumen. Pavy observed that the "usual form of albumen met with in

renal disease, is serum-albumen; while in cyclic albuminuria, two kinds of albuminous matter are present—one which, like mucin and alkali-albumen, is precipitated—the other corresponds with serum-albumen." Edes states, "When the albumen is found to consist largely or wholly of globuline, that it has a less grave significance than serum albumen."

Sufficient has been said to indicate that the present line of investigation is pointing strongly toward globuline as the form of albumen which is likely to be found in the various forms of functional albuminuria, when chemistry will furnish us with simpler methods, and more reliable reagents for its discovery.

A number of examinations of the albuminous matter found in the urine of my patient, in order to determine whether it consisted of globuline, gave negative results. Prof. Karl Langenbeck, who made the last test for me, says in his report that, "as the best methods for the separation of globuline from ordinary albumen failed, the question arose whether the failure be actually due to the absence of globuline, or whether there be conditions in the urine itself preventing the precipitation. A solution of globuline was accordingly prepared from the crystalline lens of the eye, in a part of which aqueous solution well-washed carbonic acid gas was passed through with satisfactory results. The remainder was added to the urine of 8 A.M. and the carbonic acid reaction again tried. *It failed*, proving that there were conditions in the urine preventing the detection of globuline, even when known to be present."

PROGNOSIS.

It is a matter of deep importance for us to be in a position to say, what will be the future of these cases of functional albuminuria? In the darkness which surrounds them the cry goes forth, "Watchman, what of the night?" Can we in reply say "The morning cometh?" Will they continue simple, or will they culminate in organic renal disease? In reply to this question, Granger Stewart said, "so considerable a proportion of my cases have gone on for long periods without having done so, that I am confident it must be rare when they have such an ending," and he states that he gives a hopeful diagnosis if the quantity of urea is normal, the pulse and heart in a healthy condition, and there is an absence of tube casts. In a case which he reported, he gave the following reasons for giving a favorable prognosis, viz.:

First. "There is a period in every day in which the urine is free from albumen.

Second. "The quantity of urine and urea is normal.

Third. "That except on two occasions, no tube casts have ever been found.

Fourth. "There is no symptom, except the

albuminuria, at all fitted to suggest the idea of renal disease."

Edes says: "Some cases of this kind have been followed for years without the occurrence of any symptoms leading to a suspicion of progressive renal disease. In many the albumen has disappeared without special treatment, and without the change being assignable to any particular cause."

Mahomed says: "For my own part, I am quite convinced that we may have albuminuria with practically healthy kidneys."

Roberts says: "The prognosis in functional albuminuria is favorable. It is now certain that a sensible albuminuria is of much commoner occurrence in healthy persons than has been hitherto supposed."

Pavy, speaking of cyclic albuminuria, says: "In it we have a condition which stands with sharply defined characteristics, upon its own ground, distinctly apart from that belonging to other forms of albuminuria, and without the evidence of existence or pre-existence of renal disease. . . . I could cite cases where a considerable quantity of albumen has been for a lengthened period discoverable without the development of the accompaniments of Bright's disease. . . . Experience has not shown that the disposition exists to pass out of their original form into the class associated with textural disease."

Sir Wm. Gull said: "Albuminuria occurred in growing men and boys almost as frequently as spermatorrhea." He has had case after case of chronic simple albuminuria in young men, and all have ended in complete restoration.

Senator says normal urine is often found to be albuminous, if properly examined. He found albumen in his own urine and that of his three assistants in the Augusta Hospital (Berlin)—"all of us enjoying excellent health," he says. In his own case he found it most frequently during the morning (11 to 1 o'clock), and only exceptionally in the late afternoon after the principal meal; and he further states: "I should consider it not improbable that if we were to examine the urine. . . . with great care, we should, sooner or later, find it to contain albumen in the case of every healthy man."

Klemperer says: "Cyclic albuminuria exhibits no signs of Bright's disease. Indeed, all symptoms, except the albuminuria, may be absent. Its course is chronic; it is the source of no danger to life; it does not become transformed into serious disease of kidney; and it may finally greatly diminish or disappear entirely."

Keating says: "In a large number of cases it is simply a temporary derangement of no more pathological consequence than an ordinary cold in the head, or a bronchial catarrh, and has the same consequence as these."

On the contrary there are those who hold to

the view that albuminuria is a pathological condition, and consequently that the so-called functional albuminuria is but a prelude of structural renal disease.

Geo. Johnson says a frequently recurring albuminuria if neglected, will invariably result, though it may be after many years, in structural degeneration of the kidneys. In one case that came under his observation, a period of thirty-six years intervened before a fatal termination.

Munn, in a recent letter, says: "I am satisfied that albuminuria is never a normal condition."

Kinnicutt has never been able to divest himself of an anxiety in regard to the future of such cases, although in a series of cases of "temporary albuminuria" which he published seven or eight years ago, all have recovered but a single case, and that one remained in excellent health.

Nevertheless, the majority of the writers on functional albuminuria hold that it is separate and distinct from organic renal disease, and that the prognosis is favorable.

WHAT ARE THE DISTINGUISHING CHARACTERISTICS OF FUNCTIONAL ALBUMINURIA?

The consensus of opinion, as expressed through medical journalism during the past few years concerning the characteristics of functional albuminuria, may be formulated as follows, viz.:

First. All symptoms of Bright's disease, except albuminuria, are absent. Consequently there is an absence of retinal symptoms, high arterial tension, and hypertrophy of heart.

Second. The person is apparently in good health.

Third. The coloration and the density of the twenty-four hours' urine is normal, or it may be darker in color and heavier in density. The specific gravity may range from 1,020 to 1,030.

Fourth. The quantity of albumen is comparatively small, varying from a slight opalescent cloud to one-fourth of the column of the test tube.

Fifth. There is a period of the twenty-four hours when the albumen is absent from the urine.

Sixth. There is an absence of tube casts.

Tyson says, a consideration which goes far toward establishing the functional character of it, although not essential to this end, is the absence of albumen on rising in the morning.

Janeway says a distinguishing characteristic is its presence in daytime and absence at night.

Ralfe observed that in functional albuminuria the correspondence between the fluid ingested and that passed out of the body follows the ordinary physiological law.

Roberts says, as a rule, with very few exceptions, when the urine is only slightly albuminous, and at the same time dense and highly colored, Bright's disease is not present.

Tyson says, when the quantity of albumen

habitually exceeds one-fifth of the bulk of the specimen examined, he would consider it large. Sterling fixes the limit at one-sixth, Janeway at one-fourth, and Roberts at one-half.

THE SIGNIFICANCE OF TUBE CASTS.

All writers accord a grave significance to the presence of tube casts, evidently regarding their presence as an unmistakable evidence of renal disease. There is no question but that if tube casts are habitually present, and in large numbers, that the evidence of organic renal disease would be indisputable. If, however, they have been observed but once or twice in an extended series of examinations, their presence would have but little significance, particularly if they were absent from several other specimens of urine voided the same day. Tyson says that he has known men with good medical education say that casts were present in a given specimen when there were none, certain granular aggregations having been mistaken for them. Janeway says an occasional occurrence of a hyaline cast can not be considered a proof of chronic renal disease; "they may appear in the urine after very slight and temporary changes, and as quickly disappear." Granger Stewart observed in what he calls "paroxysmal albuminuria," sudden and copious occurrence of albumen in the urine with numerous casts, the process lasting only a short time, and recurring at intervals, and he has never known them prove permanently injurious.

Allchin says: "Casts afford practical information, rarely, if ever, conclusive, when taken alone. . . . The fact that casts are abundant in any sample of urine is not in itself of necessity a serious sign; epithelial casts are met with in the earlier stages of nephritis, and their significance depends on the character of the epithelial cells."

Bartels mentions a case of "transitory albuminuria," where, besides the albumen and other sediment, there was epithelium and a quantity of thick hyaline casts, in which were clustered the ordinary well-conditioned epithelial cells from renal tubes, and after the third day no further casts could be discovered.

Munn reports three cases of albuminuria without casts, which one year later revealed hyaline casts in two cases, and epithelial, hyaline, and granular casts in the remaining one. An examination made a year afterward found the urine of all free from casts but rich in albumen.

TREATMENT.

No line of medical treatment has been found to exert any visible effect upon functional albuminuria. Care and attention should be paid to dietetic and hygienic considerations, and a quiet, even, and healthy mode of life, free from exposure to extreme conditions of any sort, should be adopted, and each case kept under observation.

Until we know much more than we do now of

this interesting condition, each case will require a separate study, as a correct generalization will depend upon the study of the individual case.

Life assurance companies have largely been the means of acquainting the profession with the knowledge that albuminuria may be present in persons apparently healthy. These companies owe it to themselves, and particularly to the large class of unfortunate persons, whom they have excluded from the benefits of life assurance, because albumen was found in their urine, that they shall use all means within their power in assisting the profession to an early solution of the significance of albuminuria in such cases.

These life assurance companies have their medical officers in every town and hamlet of our country, and many of the companies are now requiring an examination of the urine of every applicant for assurance. If their medical examiners are competent to make a urinalysis, and if they will keep a careful record of all persons in whom albuminuria has been found, and then by aid of the family physician, keep the persons under observation for a few years, examining their urine occasionally, both chemically and microscopically, and noting whatever changes may occur in them, and then report the results of their observations to the medical directors of their respective companies, the real significance of albuminuria in persons apparently healthy would soon be solved.

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THE ADVANTAGES AND DISADVANTAGES OF HIGH ALTITUDES IN DISEASES OF AIR-PASSAGES.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 21, 1890.

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OF COLORADO SPRINGS, COL.

In presenting this subject to this honorable body of professional men, I wish to say in the very beginning that I am to a great extent simply giving my own convictions, based upon some fifteen years' experience in an altitude ranging from five thousand to ten thousand feet above sea level, and do not expect to be sustained in general by climatologists.

It is a fact admitted by all physicians, specialists or other, that in all diseases of the air-passages, and especially so in catarrhal, bronchial, and similar diseases of the mucous membrane, as well as in incipient phthisis, the first object to be secured is a climate that will permit a free outdoor life in a pure air.

Intense or even moderate heat, if persistent, throws a physiological strain on the liver, skin and digestive system, and thus prevents proper nutrition, so essential to improvement in disease under consideration.

Again, intense cold throws a physiological strain on the lungs and kidneys, and also interferes with open air exercise, so necessary in such diseases; therefore a climate in which the winter is not very cold and the summer not very warm, should be selected for our patients suffering from disease of the air-passages. We claim these prerequisites in the mountain climate, and particularly so in the Rocky Mountains. As we rise

above the sea level to an altitude of five thousand feet, we meet with two important meteorological conditions: the air becomes more and more rarefied, and the heat diminishes, independently of the more or less obliquity of the sun's rays, until we reach a point, known to us as timber line, where the sun's heat is insufficient to melt the snow, and we have the privilege of looking upon the "beautiful" at all seasons of the year.

Dr. J. Henry Bennett says, in one of his valuable articles on climate, that "mountain climate has of late been much recommended for phthisis; that two conditions, namely, purity of air and sparseness of human habitation, are quite sufficient to account for the rarity of phthisis amongst their inhabitants, and for the improvement of the phthisical who resort to them." I venture the assertion that the improvement of the phthisical and the absence of phthisis among the residents of the mountain country, depends largely upon the condition of the atmospheric exhalations of the mountains, the equable temperature, the cloudless days, the electrical current eight to ten miles eastward from the base of the mountains, the absence of humidity in the atmosphere, the unresisting desire to get out doors, the refreshing, exhilarating influence of exercise, the strengthening of lung tissue caused by compulsory expansion while taking exercise in such altitudes, the increased strength of the digestive organs, the assimilation of food, continued muscular development, the attractive, constant and varied scenery, water derived from the eternal snows and ice of the mountain gorges, pure as the crystal formation found imbedded in the granite sides of these majestic rocks, carved and formed into beautiful domes and terraces by the Great Architect of the universe. These are some of the advantages of high altitudes in diseases of the air-passages more apparent, in my opinion, than the want of subjects. In specifying or classifying disease peculiar to the air-passages, benefited by high altitudes and advantages of different localities in same, or differing but little in altitude, I must confine myself to experience alone, and will give such diseases and stage of disease, which are found to be more susceptible to the salutary influence of climate in named altitudes.

We will take, first, the class known as consumptives. This is truly a wide field and covers the entire universe. A class of patients attracting the attention of every physician in the world, and especially the United States. First we select the hereditary tendency, those showing the first symptoms of this dreaded disease, the morning cough, the earliest physical signs of chronic tuberculosis of the apex, without the general appearance of the usual disturbance produced by this disease in the first stage. This class of patients make rapid progress in altitudes ranging

from five to nine thousand feet. The next are patients with more advanced disease, showing hepatization or consolidation, prior to suppuration or disintegration of tissue, even if both lungs are affected, with a pulse constantly at, or slightly above, one hundred, together with a temperature near the same, providing there is no heart complication or serious renal trouble. With proper care and advice the patient improves, and generally rapidly. Cases in which hæmorrhage has been one of the first symptoms, with slight physical evidence of disease; in all such cases I would advise immediate change to the mountain climate, and an altitude not less than five thousand to six thousand feet.

Cases in which the tissue has already yielded, cavity forming, general constitutional disturbance, disease confined to one lung, are frequently saved, disease arrested, and the patient enabled to perform manual labor, or attend to certain kinds of business, earning his own living. I have with me a little pamphlet entitled "What Climate Can Do," which contains a record of personal experience of some of our best citizens who came to Colorado Springs from eight to fifteen years ago, who largely represent this last class I have mentioned, and who are now in good health (comparatively), and attending to their usual avocations. It is prepared by Prof. D. C. Dudley, of the State Institution for the Deaf, Dumb and Blind of Colorado, located at Colorado Springs.

It represents fifty-seven, all of whom are living to-day except the Rev. Mr. Bristol, who died recently from an aggravated form of la grippe. In reference to complications, judgment in all cases is necessary, especially so in heart complications. I have known consumptive patients to improve rapidly who presented organic valvular disease, intermittent pulse and slight hypertrophy, yet those cases are not safe, unless constantly under the care of a regular resident physician. All catarrhal troubles, bronchial disease, except that of positive tubercular deposit, are benefited.

It is generally believed that the higher altitudes are a positive disadvantage in nasal catarrh. If neglected this is true, but the altitude is a great auxiliary to the physician in the proper treatment of catarrh. The secretion peculiar to this disease, and which causes so much deception in lower altitudes in catarrhal affections, is destroyed soon after reaching an altitude of five thousand to ten thousand feet, leaving the diseased membrane clear, dry, and discloses to the physician the extent and condition of the disease, thus enabling him to treat the disease more effectually and secure a permanent cure.

Among the many forms of disease affecting the air-passages, there are none more distressing than asthma, and none so perfectly and permanently relieved. In all cases unaccompanied with heart complications, the relief is immediate, and con-

tinues so while in a mountain climate and altitude not less than five thousand feet.

The advantage derived by a change from a lower moist atmosphere to a higher and dry climate in the disease thus far referred to, is absolute and specific. There are diseases heretofore considered doubtful as to the benefit derived by such change that are now classed among the beneficial. I refer to renal disease, rheumatism, general debility, depending largely upon loss of nerve force, assimilation of food and deterioration of the blood; such patients have been, and are benefited by a residence in these localities. To derive benefit from these altitudes in such diseases, the patient must know something of the dangers as well as the benefits and advantages of high altitudes; the very things advised as the best, may become the most dangerous. For instance, the patient is told that outdoor life is the greatest advantage of the high altitude. He concludes that, able or not, he must go out and walk or ride, or sit in the sunshine or under some shade tree. This may prove very beneficial to some and very dangerous to others. I have met patients walking and climbing hillsides until perfectly exhausted, the perspiration starting from every portion of the body, and several miles from their lodging-place. Rest is absolutely necessary, and the cool, inviting shade of some beautiful tree or thick foliage is selected.

The difference in temperature between the sunshine and the shade is far greater than anticipated by the stranger, and before he is aware, or sufficiently rested to return, a damage is sustained from which he never recovers. Again, horseback riding is one of the most common and most pleasant outdoor exercise in our altitudes, and perhaps the most abused. The morning is fine, inviting and promising; a party is soon formed and a start for the mountains. No thought or preparation is made for the common changes met in these altitudes, occurring so frequently after the noon hour. Some one or more of the party is the subject of incipient phthisis, or perhaps, in the second stage. The return in the afternoon may have to be made through an atmosphere very different from the morning, strong wind, recent shower, etc. The result is the invalid receives a shock, the nervous centres are disturbed, the capillary circulation impeded, congestion quickly follows, and the disease has received an impetus, and the climate and altitude an enemy. These are simple facts, yet the greatest hinderance to immediate and permanent relief within the reach of hundreds who come yearly to our mountain resorts and fail to get well.

With a proper knowledge of the peculiarities of the higher altitude and climate, so as to take advantage of the salutary and sanitary conditions offered by these localities, but few, except in the very last stages of consumption, need fear to come,

and with a confident expectation of being benefited. I will here give one case.

H. B., aged 31, from the State of New York, had several hæmorrhages; weight, 109 lbs., slight consolidation in apex of left lung, cavity in right, expectoration excessive, unable to walk two blocks. I advised his father to return with him at once. He (the young man) plead to stay two weeks; gave my consent, watched him closely—to my great surprise began to improve, in three weeks could walk to my office, a distance of six blocks. At the end of six weeks his father left him, and returned to his home. Improvement continued; at end of three months he had gained 15 lbs., was eating well and had every hope of a permanent cure. Soon after this I saw him very early one morning on a milk wagon taking a ride without an overcoat. This was about the 1st of September last. I urged him to get down and go home at once. His fingers were blue and he said he was much colder than he thought. He began to go down; I telegraphed his father, he returned with him, and in three days after reaching his home he died.

This is only one of the many who, through carelessness, lose their chance to derive benefit and secure the advantages offered to them by high altitudes in the mountain climate. Another abuse is diet, and the time and manner of eating. The effect of this dry rarefied air is to increase the appetite. After proper exercise the patient returns with an anxious desire that his meal will be ready, the craving appetite is satiated with food entirely unfit for the condition manifest in the person, the system is already tired from exercise, the food is rapidly eaten, and the result is faulty digestion and a great disadvantage to the patient. How can we remedy these evils, and secure to this class of invalids the great advantage offered to them by such localities? First, by educating them, giving them proper instructions, see that they consult and follow the advice of some regular resident physician. Send them to the best locality suited to their peculiar and individual condition. In speaking of localities, I again confine myself to experience, and suggest the following places in order named:

Colorado Springs, Denver, Col.; Salt Lake City, Utah; Leadville and Pueblo, Col. I speak of these places without prejudice and for the following reasons:

1. Colorado Springs has the greater advantage from location. Altitude fifty-six hundred feet, six miles from the base of the mountains, just the proper distance to get the full benefit of the natural exhalations of the mountains, producing at this point equability and dryness. The only point that this most important atmospheric condition can be found.

2. On the north it is protected by the great Continental Divide, extending east to the Mis-

souri River, on the west by the mountain range, and open to the east and south. The continuous sunshine, averaging three hundred and twenty-five days to the year, giving an opportunity to invalids to bask in the sunshine winter and summer alike. The temperature is remarkable for such an altitude.

I have a record taken by myself for the past fifteen years, at 6 A.M., 12 M., and 6 P.M. I will here give you the average for the past seven years of January our coldest month, and July our hottest month, mean temperature for each month:

For the month of Jan., 1883, 16.3 above.
 For the month of July, 1883, 69.2 above.
 For the month of Jan., 1884, 16. above.
 For the month of July, 1884, 86.9 above.
 For the month of Jan., 1885, 15.7 above.
 For the month of July, 1885, 82.9 above.
 For the month of Jan., 1886, 14.8 above.
 For the month of July, 1886, 88.5 above.
 For the month of Jan., 1887, 21.3 above.
 For the month of July, 1887, 83. above.
 For the month of Jan., 1888, 18.3 above.
 For the month of July, 1888, 85. above.
 For the month of Jan., 1889, 16. above.

Again, the inviting appearance of the city. Parks laid out with a special view to the comfort and wants of invalids. Our streets entirely free from mud and less dust than any other point. Every home, even the most humble, having inclosed yards, well kept lawns and magnificent shrubbery. I mention this from the well-known fact to our profession, the wonderful influence, inviting home-like environments, have upon this class of patients. We find this knowledge demonstrated to perfection in our hospital grounds everywhere. The surroundings, the most tasty and beautiful. Beautiful shade trees line both sides of our streets throughout our city.

Again, the drives, the magnificent scenery, so varied and changing, at every turn in the mountain pass; the pure water, the medicinal waters of Manitou, the wonderful medicinal Springs lately discovered within the city limits of Colorado Springs, proven by strong and positive test to be a most valuable remedy in renal, stomach, catarrhal and uterine troubles, all tend to make this one of the first and most salutary localities for invalids in the United States, and perhaps in the world.

In the more serious heart complications, Salt Lake City, Utah, offers the safer haven, situated on the western slope of the Rocky Mountains with an altitude of a little over four thousand feet, very similar to Colorado Springs. While it is a fact that all cases of laryngeal phthisis are thought to be aggravated by the stimulating character of the atmosphere, and variability of the climate in high altitudes, I have seen many cases, well marked, improve rapidly at Colorado Springs.

What I have said in regard to Colorado Springs, as a place of refuge for so large and

various a class of invalids, may be said of other places named in this paper so far as they approach in locality, elevation and other prerequisites, so beautifully and aptly commingled by nature at this point. It is easy of access, being a railroad centre. Six roads entering from every point of the compass. The best educational advantage being the proud home of Colorado College, unsurpassed public schools, together with the religious denominations of every name well represented, and most of them possessing fine church edifices, and not a saloon in the city.

In conclusion, I am confident that when the advantage of these localities in high altitudes are thoroughly known and understood by the medical profession, thousands who must die by remaining in other localities, will be sent to these places and restored to health.

CHOLESTEATOMA OF THE EAR.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY B. ALEX. RANDALL, A.M., M.D.,

PROFESSOR OF DISEASES OF THE EAR IN THE PHILADELPHIA POLYCLINIC, ETC.

The subject of cholesteatoma has received a considerable amount of attention on both sides of the Atlantic, yet seems one to which further attention can be profitably devoted. Writers on pathological anatomy are apt to be silent on this point, as though true cholesteatoma were a very rare tumor, met almost solely on the brain membranes; or else they strongly combat the claim that the ear is a frequent seat of the growth. Aural surgeons, on the other hand, too often regard these cases as only desquamative inflammations, and draw no distinction between mere aggregations of exfoliated epidermis and the true pearly tumor. The reason is not far to seek. Desquamative conditions are frequently met, and are open to ready study; cholesteatomata are generally buried in the bony cavities, and are removable only piecemeal during life, and are then nothing more than epidermal shreds, almost indistinguishable from any other flaky masses.

Waiving in great part the question of how often the cholesteatomatous masses met in clinical work are to be viewed as tumors in the strictest sense, I would like to draw attention to their frequent occurrence and their serious importance. A recent statement of Virchow's fittingly opens the discussion: "Of the fatally-ending cases of middle-ear suppuration among us, nearly one-third are to be ascribed to this form of growth,"¹—a statement that for force and authority could hardly be surpassed, and needs no additional citation of authorities. Having had no personal ac-

quaintance with fatal cases of cholesteatoma, not having met them in the few fatal ear cases (generally with meningitis or brain abscess) which I have studied post-mortem, I will turn to the question of its clinical occurrence in the non-fatal cases, which make up in frequency for their presumably lesser gravity. Many varieties of the condition will be met, differing widely in their characteristics, and to this is due the varying names that have been applied, and the divergent views entertained as to their nature. For instance, a colored woman of 50 years, came a year since to the Polyclinic complaining of deafness, tinnitus and some vertigo, growing steadily worse for some months. Both auditory canals were blocked with yellowish, horny masses, which were with much difficulty removed entire. The record showed that similar collections had been removed four years previously, and the diagnosis then made of desquamative otitis externa, corresponds with cases published by Buck, Pomeroy and others. Both drum membranes had been previously destroyed by long-standing suppuration, probably with caries, and the exposed tympanic cavities were lined with cicatricial tissue of the same pearly lustre as the material removed from them. The meatus walls were not free from traces of exfoliating epidermis, but it was very evident that the plugs were derived from within the tympana, as the desquamation of the pearly lining. The connection of the inmost part of the mass to the tympanic wall was partly organic, and broken only by force; and no clear distinction could be made between the most recent portion of the removed mass and that which still covered the promontory, and bled when lightly scratched. The absence of suppuration made the study easy in this instance.

More often pus is present when the case comes for treatment, and the condition is thereby much obscured. Such was the case of an inmate of the Deaf and Dumb Institution, Lizzie W., æt. 9, seen May 12, 1888. Cleansing of the discharge from the right meatus showed a large destruction of the drum membrane, with apparent loss of all three ossicles, and stuffing of all the depressions with white, flaky epidermis. This was removed with great difficulty by syringe, probe and forceps in alternation, and it is very doubtful if the attic and antrum have ever been emptied. A dark point the size of a pin's head, halfway out the posterior wall of the canal, called for investigation, and proved the summit of a similar epithelial mass lodged in the neighborhood of the antrum. The small opening in the skin was stretched in dragging forth the material within, until it revealed an opening in the bony wall through which a large pea might pass; and the cavity within, when finally emptied, was found to measure nearly 15 millimetres in each dimension. The laminated masses of epidermis removed from it would have filled a drachm vial. Only

¹ Trans. Berlin Med. Soc., 1889, p. 58, Arch. f. Ohrenh., xxviii, October 18, 1889.

after numerous sittings was approximate completeness attained in the cleansing. Then suppuration promptly ceased—to recur once or twice in the past year, when the collection of epithelium had formed anew.

A still more notable case was that of a fellow-pupil in the same institution, Susan C., æt. 14, who was brought with suppuration of both ears. The greatly altered tympanic cavities were so tightly packed with pearly epidermis, that only after six or eight sittings of half an hour's duration, when forceps, probe, curette and syringe were used to the exhaustion of both patient and surgeon, were the tympana emptied. Drum membranes and ossicles were gone on each side, and a glazed cicatricial tissue covered the visible surfaces. At the next visit the right ear was dry; but on the left some suppuration continued, a few epidermal flakes were visible, and the probe and curved forceps drew away a good deal more of the same material from the attic and the entrance to the antrum. Although now clean, as far as sight and touch could determine, continued syringing was ordered, unless the ear remained perfectly dry. This was carried out for three days, and when next seen, there was found a cholesteatomous mass filling the auditory canal, and measuring on removal $26 \times 8 \times 6$ mm. It was doubtless swollen by imbibition of fluid, but after drying was still nearly as large in each dimension; and one could but wonder where there had been room in the temporal bone for it to hide itself. Suppuration at once ceased, and has recurred only once or twice for short periods, and on this side alone.

So large a proportion of the deaf-mute patients whom I have treated presented this condition in greater or less degree, that I now expect it in the old suppurative cases, and distrust any negative findings until after repeated examination; and I always order the cases showing it to return within a couple of months, even if the ear remains apparently free from any suggestion of trouble. Some of them do so, and renewed collections are generally found; others suffer a renewal of the otorrhœa before the time set for their return, and the removal of the fresh collection is followed by prompt cessation of the discharge.

The first notable case of this kind which I met was Margaret M., æt. about 35, who came in January, 1883, to the Episcopal Hospital. She was very deaf, and spoke a scarcely intelligible German dialect, so that little was learned of the history or subjective symptoms, except that she suffered much with dizziness. Examination showed the left canal clear, and the drum membrane largely destroyed and altered almost past recognition by thickening and adhesions, evidently the results of old, long-standing suppurative disease. On the right the canal was blocked with a mass, apparently cerumen, and its removal showed a

condition of the deeper structures closely similar to that on the left. The endeavor to inflate the tympanic cavities probably failed, but some relief seemed to have been obtained. At her second visit, a scale of dark material was still present on the posterior wall of the right meatus, and it was removed as a matter of principle, since several cases of sinus in such a situation had recently been seen. A large sinus was revealed, from which an astonishing mass of material was removed, most of which resembled moist buckskin, but the central portions of which were dry, opalescent, and closely laminated. The walls of the cavity were moist with a pus of strong odor, having a pungency rather characteristic of cholesteatomatous masses. Further relief followed this clearing. At a subsequent visit, the walls of the cavity were found dry, smooth and firm except in the innermost part. The portions visible through the opening in the meatus wall were pale, cicatricial and glazed. The opening into the wall of the canal was found to measure 12 mm. in each dimension; and the cavity in the mastoid extended from the level of the meatus floor to 12 mm. above its roof, and a curved probe could be passed 15 mm. directly backward, and its tip could be brought so far outward as to show that little bone was left between it and the skin. We had therefore a cavity some 20 mm. in height, 15 mm. antero-posteriorly, and extending from near the surface of the mastoid at least 30 mm. inward. Two points were found up and in where the probe met no bony resistance, and pressure caused vertigo and faintness, probably from pressure on the meninges. There was some further improvement in hearing, and less dizziness; but advance soon ceased, and as she was near confinement, she dropped out of sight. The wonder was in this case, that there was room in the mastoid for such a cavity; and there was probably here a beginning of that encroachment of the mass upon the cranial cavity, which has been so marked in some of the fatal cases described.

In a closely similar case more recently seen, the woman was seriously ill, with high fever, severe pain, and much mastoid tenderness on the right; but the acute symptoms were in large part due to a developing quinsy. Polypoid masses filled the meatus, and by their recurrence after removal, obscured the condition; but enough epithelial flakes were removed at the first sitting to indicate the probable nature of the trouble. Cleansing with syringe, probe and forceps, was pushed as far each time as the patient's condition permitted, and when last seen, two months later, the large cavity above and behind was clear and dry, except for the trace of discharge which came from some granulations on the inner lip of the sinus, where the polypus had formerly grown around a small carious point. Instillation of warm water showed that the capacity of the cav-

ity and canal was at least double that of the normal canal upon the other side. A fraction of the hearing had been gained, and the patient considered herself well.

In each of the cases cited, the formation was quite surely secondary to destructive suppurative inflammation; and the cases are extremely few where this can be excluded, and the growth regarded as primary. Yet such cases have been reported by Lucae, Kuhn, and others, as occurring in the mastoid without perforation or other evidence of previous inflammatory trouble; and similar growths have occurred independently upon or in the drum membrane. Politzer has found small pearly bodies in the mucous membrane of the promontory, clearly comparable to those usually met in epithelioma, and probably ready to develop, under favoring conditions, into the conspicuous masses under discussion. Primary cholesteatoma of the ear must, therefore, be accepted as a reality, and as probably less rare here than in other situations. Secondary cholesteatoma, varying from pearly tumors, distinguishable only by their nuclear mass of caseous matter, if at all, from the primary, to mere desquamative masses of indeterminate form and structure, are of quite frequent occurrence. Toynbee noted ten such tumors, aside from epidermal collections in the external meatus, among 1,013 diseased temporal bones, and all observers of wide experience confirm such findings. Their importance lies largely in their tendency to form insidiously in cavities, where they are out of sight and reach, and to maintain and aggravate the inflammatory processes of which they are usually the results. Continued growth leads to absorption by pressure of the surrounding walls, widening the cavities and laying open the important adjacent fossæ. Huge tumors of this sort have been found invading the cranial cavity, and leading to fatal brain disease. The lateral sinus has been laid open by them, and thrombosis or hæmorrhage has ensued, with fatal outcome; or septic osteitis has been set up, with resulting pyæmia. These are their more direct results: they constantly interfere mechanically with the drainage in suppurating cases, increasing the danger, extending the destruction, and forming most serious obstacles to successful treatment. Their removal is often very difficult, and their recurrence probable and dangerous; so the claim with which this paper opened, that they are worthy of most careful study, seems fairly sustained. Awkward as is the name cholesteatoma, its employment in this connection has no small value; for it better suggests the importance and tendency of the pathological condition than does the misleading, if correct, term, desquamative inflammation. Many of the text-books regard these conditions as usually belonging merely to the external auditory canal; and I believe that many students have, like my-

self, winnowed the instructive from the misleading in these descriptions only after some trying personal experiences have furnished a much needed key. That there may be others to whom the subject is almost unknown, is my reason for placing upon record these incomplete notes.

DIAGNOSIS AND OPERATIVE TREATMENT OF GUNSHOT WOUNDS OF THE STOMACH AND INTESTINES.

Read by Invitation in the Surgical Section of the Tenth International Medical Congress, August 8, 1890.

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(Continued from p. 320.)

Hydrogen Gas Test as Applied in the Diagnosis of Perforating Gunshot Wounds of the Abdomen.

I have up to the present time applied this test in over one hundred cases of gunshot wounds of the abdomen intentionally produced in dogs, and in every instance where the stomach or intestine was wounded, the visceral complication was positively diagnosed before the abdomen was opened; hence I have no reason to make any retraction from the claim previously made, that the test is infallible in making a positive differential diagnosis before abdominal section is made, between a simple penetrating gunshot wound of the abdomen and a penetrating wound complicated by visceral wounds of the gastro-intestinal canal.

In all these experiments the animal was strapped on one of Pasteur's operating tables, the abdomen shaved, and after the animal was fully under the influence of an anæsthetic, the shooting was done with a 32-calibre revolver. Rectal inflation of hydrogen gas was practiced immediately after the shot was fired, and after its diagnostic indications were carefully studied and noted, the abdomen was opened and its contents examined for visceral injuries. In all cases where the colon was perforated, inflation could be done under very slight pressure, as the gas readily escaped into the peritoneal cavity and from there through the wound of entrance, where it was ignited as it escaped. If the perforation of the intestine was located above the ileo-cæcal valve, more pressure was required, as the resistance offered by the ileo-cæcal valve had to be overcome before the small intestine could be inflated. I will cite only one of the many experiments.

"*Experiment 65.*—Dog, weight twenty-five pounds. Under full anæsthesia the animal was shot in the abdomen, the bullet passing nearly in a transverse direction through the abdominal cavity, an inch and a half below the umbilicus,

the points of entrance and exit being midway between the linea alba and spine. Rectal insufflation of hydrogen gas made under very low pressure was followed by rapid distension of the abdomen, an occurrence which furnished strong evidence that the gas escaped through a perforation of the colon into the peritoneal cavity. The gas escaped at once from the wound of entrance and when ignited burned in a steady blue flame. On opening the abdomen, gas escaped from the peritoneal cavity, the small intestine was empty, and only a small quantity of gas was found in the colon. The following intraperitoneal injuries were found: Four perforations of the duodenum, two of the jejunum, and one of the cæcum, also a perforation nearly through the center of the left kidney, laceration of the receptaculum chyli, and a number of perforations in the mesentery. The bullet was found between the left kidney and the abdominal cavity."

In this experiment, as in all others of a similar nature, the gas escaped through the lowest perforation and accumulated in the peritoneal cavity until the intra-abdominal pressure became sufficient to force it through the perforation in the abdominal wall.

In using the hydrogen gas test in the diagnosis of perforating gunshot wounds of the abdomen it is of the greatest importance to observe carefully the effects of the inflation in changing the form of the abdomen. If the colon is perforated the gas will escape readily through the opening in the bowel under low pressure, probably not more than quarter to half a pound to the square inch. As the gas accumulates in the free peritoneal cavity the abdomen is at once uniformly distended and the free tympanites can be proved by absence of liver dulness. Even if gas should not escape through the external wound, its presence in the free abdominal cavity would be sufficient proof of the existence of intestinal lesions and would consequently be a convincing argument for the necessity of laparotomy.

If no intestinal complications are present, or if the visceral wound is located above the ileo-cæcal valve, this becomes apparent after insufflation has progressed sufficiently to distend the entire colon, a condition which may be known to be present from the increased width of the abdomen and the area of tympanitic resonance over the distended organ. Auscultation over the ileo-cæcal region will enable the surgeon to tell when the resistance of the ileo-cæcal valve has been overcome, as this will be announced by a distinct and audible gurgling or blowing sound as the gas rushes from the colon through the opening caused by the mechanical separation of the margins of the circular valve into the ileum. As the loops of small intestine one by one become distended from below upwards with the gas, the hypogastric region first becomes prominent and tympan-

itic, and if no perforations are present, the abdomen becomes barrel-shaped from the distension due to dilated intestines. In this condition the liver is lifted upwards by the distended intestines, the dulness is not effaced as in free tympanites, but the area of dulness is carried higher up.

If the small intestine is perforated some distance from the ileo-cæcal region, the limited distension and tympanites in the hypogastric region caused by the distended intestinal loops below the perforation will soon be displaced by the free tympanites resulting from the escape of gas into the peritoneal cavity.

If the rules laid down in this paper for the treatment of penetrating gunshot wounds of the abdomen are followed, free tympanites will never occur, as the gas entering the peritoneal cavity from an intestinal wound will escape at once through the perforation in the parietal peritoneum which has previously been exposed by incision through the abdominal wall down to this point.

A Clinical Contribution in Testimony of the Value and Reliability of the Hydrogen Gas Test in the Diagnosis of Penetrating Gunshot Wounds of the Abdomen.

The following six cases of penetrating gunshot wounds of the abdomen have come under my personal observation since I have demonstrated experimentally the value of rectal insufflation of hydrogen gas in the diagnosis of traumatic perforations of the gastro-intestinal canal. In the treatment of these cases I relied implicitly upon the indications derived from the test.

Case 1.² Gunshot Wound of Chest and Abdomen; Double Perforation of Stomach; Laparotomy; Death from Hæmorrhage and Shock.—C. H., a man, seventy-two years of age, was brought to the Milwaukee Hospital by the police patrol, at 7 A.M., July 9, 1888, for a suicidal, bulldog pistol (44-calibre), wound of the chest, inflicted about two hours previously. Pistol held in the left hand, as ascertained from the patient and confirmed subsequently by examination of the direction of the bullet. The patient stated that he had pointed the pistol toward the heart.

Examination, 7 a.m.—Wound of entrance situated in the sixth left intercostal space, surrounded by emphysema. Seventh rib fractured at junction of cartilage and bone. No wound of exit. Patient conscious; complains of severe pain in the epigastric region, increased by pressure. Pulse rapid and weak; vomits and expectorates blood; area of liver dulness diminished. Percussion and respiratory sounds normal. No evidence of hæmo- or pneumothorax.

9 a.m.—Flexible tube introduced and stomach inflated with hydrogen gas from a four gallon rubber balloon. Gas escaped and ignited at the wound of entrance with an audible sound. Field of operation thoroughly disinfected. Patient

² The Medical News, Aug. 25, 1888.

etherized and laparotomy made by incision from the ensiform cartilage to the umbilicus. The omentum and stomach were drawn forward into the wound. A large perforation, about one and a half inches in length (the large size being due to the oblique direction of the bullet), was found in the stomach, midway between the pylorus and the cardiac extremity, near the greater curvature. Stomach partially filled with coagulated blood. With the index finger introduced through this perforation, another was detected in the posterior wall near the lesser curvature. An opening was made in the lesser omentum, but on exploration of the posterior surface of the stomach, the second perforation could not be found. The blood-clots were removed from the stomach by irrigation through the lower wound.

For the purpose of finding the second wound the stomach was again inflated with hydrogen gas which was injected directly through the perforation. The gas escaped through the posterior opening in a continuous stream, which made it easy to locate the second perforation. The omental opening was enlarged by tearing, and the perforation was discovered on the posterior surface near the lesser curvature and close to the cardiac orifice. Great difficulty was experienced in dragging the stomach sufficiently forward and downward into the abdominal incision to enable me to suture the perforation, which was two inches in length. It was closed by a continued sero-muscular suture, the anterior perforation by Czerny-Lembert sutures. A large quantity of fluid and coagulated blood was found behind the stomach, in the region of the pancreas. Copious hæmorrhage had evidently taken place at both perforations as well as in the post-peritoneal space. The visceral wounds indicated that the bullet had passed from above downward, backward, and to the right.

At this stage of the operation the patient collapsed from the continued effect of shock and hæmorrhage. The foot of the table was elevated, external heat applied, and a saline infusion to the amount of fifteen ounces was made into the left median basilic vein. Brandy was injected subcutaneously and the faradic current applied, but all these means proved fruitless, and the patient died from the combined effects of hæmorrhage and shock before the external wound could be sutured.

After death the abdominal incision was closed and inflation of hydrogen gas, *per rectum*, made to test the condition of the sutured perforations. A stomach tube was introduced and the gas, under a pressure of less than a pound to the square inch, was forced through the entire gastrointestinal canal and escaped through a small glass tube which had been inserted in the distal end of the stomach tube, where it was ignited and burned in a continuous flame as long as the

pressure upon the rubber balloon was continued. This showed that both visceral wounds had been effectually closed and that no other perforations existed.

The necropsy, which was made at once, revealed that the bullet had entered the chest through the seventh rib near the junction with the costal cartilage, causing a comminuted fracture. The pleural cavity at this point was obliterated by adhesions. The bullet passed through the lower lobe of the left lung, after which it perforated the diaphragm and entered the abdominal cavity, passing through the cardiac extremity of the stomach from above downwards. Liver and spleen intact, upper margin of tail of pancreas lacerated. Bullet passed to left of the aorta, entered the left crus of the diaphragm, fractured the last rib at the neck and perforated the spinal column, entering between the last dorsal and first lumbar vertebræ, escaping through the body of the latter, fracturing at the same time its right transverse process. The bullet was found in the subcutaneous connective tissue in the right lumbar region. The spinal canal was opened by the bullet in its passage through the vertebra, and loose fragments of bone lay in the canal. The membranes were intact and the cord itself not injured.

Remarks.—The location of the wound of entrance in this case did not indicate that the bullet had entered the abdominal cavity, unless the revolver was held in the left hand; in that case, if directed toward the heart, the track of the bullet would necessarily be downward, backward and from left to right. Taking it for granted that the bullet took this direction, it would still have been possible for the stomach to escape injury. The circumscribed emphysema around the external wound and the hæmoptysis, as well as the location of the wound, left no doubt that the lobe of the left lung was injured. The absence of hæmothorax and pneumothorax was explained by the post-mortem, as the left pleural cavity was found completely obliterated by adhesions. Under a pressure of not more than half a pound to the square inch, the hydrogen gas was forced from the stomach through the external wound, where it was lighted and burned in a large continuous flame until it was extinguished by compression with a large moist sponge, thus demonstrating positively the existence of perforations in the stomach.

Although the stomach can be inflated by rectal insufflation of hydrogen gas, the more direct method by using a stomach tube should have the preference in cases of perforating gunshot wounds of the abdomen where from the course of the bullet there exists a probability, or even a possibility, that this organ has been injured. Dr. Ohage's case serves as a warning to apply the test again even after suturing two perforations made by one

bullet passing transversely through this organ, for the purpose of detecting a third perforation should this exist.

*Case 2. Gunshot Wound of the Abdomen; Twelve Perforations; Laparotomy; Recovery.*³—J. J., a young man sixteen years of age, was out hunting on Sunday, September 9, 1888, with some companions, one of whom accidentally discharged his 22-calibre rifle at a distance of about one hundred and fifty feet, the bullet striking the patient in the abdomen. The injury caused but little pain, and immediately after the accident the patient walked about forty yards to a farmhouse where he was placed in bed. From there he was conveyed on a cot, in a farmer's wagon, to the hospital, some six miles distant. The accident occurred about noon, and he arrived at the hospital at 3 P.M.

Examination.—Patient complains of considerable pain in the abdomen; pulse 80 and soft; his general appearance indicates no serious injury. On undressing him, a bullet wound, with omentum protruding, was found two inches to the right of the middle line, and on a level with the anterior superior spine of the ilium. Left iliac region dull on percussion; and in right a cracked-pot sound was elicited on percussion. A rectal enema was administered, and was followed by a free faecal discharge, without admixture of blood. (On washing the faeces afterward the bullet was found.)

Operation.—Ether, as an anæsthetic; thorough disinfection of abdominal wall; rectal insufflation of hydrogen gas, followed by the escape of bubbles of the gas, within a few seconds, at the wound of entrance, into which had been placed a hæmostatic forceps, the blades separated so as to render the canal patent. The gas was lighted, and after thorough cauterization of the wound by the flame it was extinguished by the application of a wet sponge.

Laparotomy by median incision, eight inches in length from pubes upward. About a pint of fluid blood in the peritoneal cavity, and hæmorrhage continuing from mesenteric veins at two points of perforation on the mesenteric side of the bowel, and to a less extent from perforations of the mesentery; arrested by ligating *en masse*. Within a distance of four feet, near the middle of the ileum, were found ten perforations, two of which were at the mesenteric border; also four perforations of the mesentery. Another perforation of the bowel was found within four inches of the ileo-cæcal valve on the convex side of the intestine, making so far eleven in all. All were closed by Czerny-Lembert sutures. At two points the perforations were so close together that it was found necessary to invert half the circumference of the bowel on the convex side, thus producing considerable narrowing of its lumen.

Two hours had been consumed in arresting the hæmorrhage and closing the eleven perforations, and the patient at this time had become pulseless, and yet it was deemed absolutely necessary to determine beyond all doubt if any more perforations existed by repeating the rectal insufflation of hydrogen gas. On repeating this test it was found that gas escaped freely from the pelvic cavity, without reaching the ileo-cæcal region, showing that at least one more perforation was below this point. The sigmoid flexure was brought into the wound and compressed between the index finger and thumb. Insufflation was again followed by escape of gas, demonstrating that the perforation was below this point. Inch by inch the bowel was examined by this method in a downward direction, until a perforation was found in the anterior portion of the rectum at a point where the peritoneum covering its anterior wall is reflected upon the bladder. The perforation was rendered accessible to direct treatment by an assistant making traction on the colon and by keeping the margins of the wound well retracted by means of a pair of Hegar's retractors. It was closed by five Lembert sutures, with the greatest difficulty, on account of its deep situation and the inadequate light, which was furnished by two candles. From the perforations in the ileum there escaped pieces of green apples and intestinal contents, and from that in the rectum fluid faeces.

The peritoneal cavity was freely irrigated with a one-third of 1 per cent. solution of salicylic acid. After completion of the peritoneal toilet, a Keith's glass drain was introduced in such a manner that the distal open end was placed opposite the sutured rectal wound, and the abdominal incision closed in the usual manner. Whiskey was freely administered hypodermatically during the operation and after its completion, as the patient remained pulseless for half an hour. Time of operation two hours and a half. The foot of the bed was elevated and dry heat applied to the extremities.

Reaction was established slowly, but although the temperature did not rise much above normal, the pulse remained between 120 and 144 for two days, and during this time the patient was delirious. After the second day pulse and temperature nearly normal. The drainage tube was emptied every three or four hours by aspiration with a syringe, to the nozzle of which a piece of rubber tubing was fastened. Second day normal passage from the bowels. On the fourth day a faecal fistula formed at the site of drainage, which closed ten days later.

The patient left the hospital completely cured six weeks after his admission, and has remained in perfect health ever since.

Remarks.—The subjective symptoms in this case four hours after injury, and after transport-

³ The Medical News, November 10, 1888.

ing the patient a distance of six miles, furnished no indications whatever of the extent of the visceral injuries which were found and treated during the operation. The rectal insufflation of hydrogen gas at once rendered the diagnosis accurate and positive, and pointed out the necessity of abdominal section. Eleven perforations were found and sutured without much difficulty, but the last perforation, in the deeper portion of the pelvis, could not have been detected by any other means of diagnosis short of rectal insufflation. Had this perforation been overlooked, death from septic peritonitis would have been inevitable, as considerable fæces had escaped through the perforation into the peritoneal cavity.

Drainage was established in this case, not only on account of the fact that fæcal extravasation had taken place, but also for the reason that, owing to the difficulty in gaining access to the rectal wound, I feared that the suturing was not as perfect as it should be, and by proper drainage I wished to guard against possible extravasation into the peritoneal cavity. Subsequent events proved the necessity of this precaution.

Case 3. Perforating Gunshot Wound of Abdomen; four Perforations; Peritonitis; Laparotomy; Death.—J. E. (case of Drs. Gudden, Steele, and Gordon, of Oshkosh), eighteen years of age, was out target-shooting with a companion, who, while raising his 22-calibre rifle to his shoulder, accidentally discharged it; the bullet struck the patient in the abdomen. He was about forty feet distant, and almost directly facing his companion. When first seen by Dr. Gudden, within half an hour after the injury was received, he was suffering pain in the abdomen, was pale, covered with cold, clammy perspiration, and vomited frequently. He was placed in a carriage and conveyed to his home, a distance of two miles. During the journey, the severity of the abdominal pain was so increased by the motions of the carriage as to necessitate repeated stops.

I saw the patient, with the above-named physicians, October 9, 4 A.M., twelve hours after the accident.

Examination.—The wound of entrance was found to be at the outer margin of the left rectus muscle, about one inch below the level of the umbilicus. Abdomen dull on percussion in left iliac region, pulse 140, temperature 100° F. Penetration of the abdomen was proved by the introduction of a grooved director, which was left in place during the insufflation of the hydrogen gas.

The patient was placed under the influence of chloroform, and during the operation the narcosis was maintained with ether. The abdomen was thoroughly disinfected, and rectal insufflation of hydrogen gas practiced to ascertain if any perforation of the intestine existed. Under a pressure of about half a pound to the square inch, and the use of one-quarter of a gallon of gas, in a

few minutes the gas escaped along the groove of the director, and, on applying a match, ignited as it escaped. The flame was now extinguished by a moist sponge, and the abdomen opened by a median incision, five inches in length, extending from the umbilicus to near the pubes.

On exposing the peritoneum at the lower angle of the incision, through this membrane there was observed a structure closely resembling an over-distended bladder. That this structure was a distended bladder was improbable, as the boy had urinated before the anæsthetic was administered. The peritoneum was carefully incised between two forceps and divided upon a grooved director to the same extent as the external incision, and it was then discovered that what appeared to be an over-distended bladder was a coil of small intestine distended with blood to twice its normal size. The whole pelvic cavity was found to be filled with fluid blood. On withdrawing the small intestine, five perforations, within a distance of three feet, near the junction of the jejunum and ileum, were found; four occurred in pairs on the lateral aspect of the bowel, and one at the mesenteric attachment. All the perforations were disproportionately large to the size of the bullet, and would easily admit the tip of the index finger. The intestine, at the point of injury, was covered with a thick layer of recent plastic lymph, and the parietal peritoneum presented all the evidences of a beginning diffuse septic peritonitis. The intestine, which was over-distended by blood-clots for about three feet, was emptied and irrigated with a one-third of one per cent. solution of salicylic acid, which was used for constant irrigation during the entire time required to suture the perforations, which were closed by Czerny-Lembert sutures.

Further examination disclosed four perforations of the mesentery, from two of which quite profuse venous hæmorrhage was still going on. The hæmorrhage was arrested by ligature *en masse*, by passing a needle, threaded with fine silk, through the entire thickness of the mesentery, on either side of the perforations.

Rectal insufflation of hydrogen gas was repeated, so as to ascertain if any other perforations existed, and the gas, after it had been gently forced beyond the highest perforation, was made to traverse the balance of the entire intestinal canal by drawing forward loops of the intestine and returning them as examined without further insufflation. This procedure was found entirely satisfactory and practical, as the gas, on account of its low specific gravity, readily entered the highest point in the prolapsed intestinal loop.

The abdominal cavity was irrigated with salicylic acid solution, numerous coagula removed, the toilet completed, a glass drain introduced into the pelvis, and the abdomen closed.

Duration of operation two hours. Patient col-

lapsed, pupils greatly dilated, and almost pulseless in spite of repeated hypodermatic injections of brandy, which were administered when signs of collapse became apparent, throughout the operation. Enema of a teacupful of warm water and two ounces of brandy. Foot of bed elevated and external dry heat applied.

In an hour and a half he rallied somewhat from the operation, but again sank and died at 3 P.M., eight hours after the completion of the operation.

Post-mortem eighteen hours after death (Drs. Steele, Gudden, and Gordon). Circumscribed peritonitis present at the time of operation, now diffuse; very little fluid in abdominal cavity; several small blood-clots in vicinity of transverse colon. The perforations were all securely closed, and the bullet was found in the soft tissues to the right of the spinal column, between the fourth and fifth lumbar vertebrae, and near the ascending colon. The bullet, though only of 22-calibre, was oblong, and may thus explain the unusually large size of the perforations.

Remarks.—This case, compared with the foregoing, furnishes a strong argument in favor of early operative interference in cases of gunshot or stab wounds of the abdomen in which the existence of visceral lesions can be demonstrated by rectal insufflation of hydrogen gas. In the first case, although twelve perforations were found and sutured, and faecal extravasation had taken place, no evidences of peritonitis were found, and the patient recovered. In this case twelve hours intervened between the time the injury was received and the treatment by laparotomy, during which time a septic peritonitis had developed, the extension of which the operation did not arrest, and from the effects of which the patient died.

Case 4. Penetrating Gunshot Wound of Abdomen; Hydrogen Gas Test used with Positive Result; Laparotomy; Two Perforations of Ascending Colon; Death from Peritonitis on fifth Day—This patient, a boy fourteen years of age, was shot in the abdomen by the accidental discharge of a 22-calibre rifle in the hands of his playmate, who was standing a few feet from him. The accident occurred September 23, 1889, at 5 o'clock in the afternoon. The physician who was first called probed the wound and ascertained that the bullet had entered the peritoneal cavity, and sent the boy at once to the Milwaukee Hospital for surgical treatment. No shock and no evidence of internal hæmorrhage.

Two hours later, after the necessary preparations had been made for laparotomy, the hydrogen gas test was applied, and as this yielded a positive result, the abdomen was opened at once. The wound of entrance corresponded with the umbilical depression, and from the position of the patient at the time the accident occurred and from the direction in which the bullet was discharged, I had reason to believe that the ball passed through

the peritoneal cavity from the wound of entrance in a direction from left to right.

The abdominal cavity was opened by a median incision extending from the wound of entrance to near the pubes. A small quantity of hydrogen gas was found in the peritoneal cavity. The colon was moderately distended, and I had no difficulty in detecting a perforation about eight centimetres above the ileo-cæcal region. The visceral wound was on the same level with the parietal wound and on the side of the bowel towards the umbilicus. I expected to find the second perforation at a point opposite and on the same level, but the most careful examination failed to reveal its existence. I could find no extravasation or discoloration which would have assisted me in locating the second visceral wound, of the presence of which I was convinced.

To locate the second perforation I resorted to the following procedure: The colon was compressed above and below the perforation that I had found, and direct insufflation with hydrogen gas was made through the visceral wound. The gas escaped from behind the bowel, and the continued escape led me at once to the wound, which was located between the serous layers of the mesocolon and was completely hidden behind the anterior peritoneal layer. No faecal extravasation was found before or after the insufflation. Nevertheless it was deemed advisable to flush the peritoneal cavity with warm sterilized water. After testing the remaining portion of the intestinal canal for additional perforations, the visceral wounds and the external incision were closed in the usual manner. A Keith's glass tube was inserted to secure drainage. The case progressed favorably for thirty-six hours, when evidences of diffuse septic peritonitis developed, which rapidly increased in intensity until the fatal termination, the fifth day after the operation. No post-mortem.

Remarks.—As the whole length of the gastrointestinal canal was treated for additional perforations at the time of the operation, and none were found, we must take it for granted that the fatal peritonitis was caused by infection through the visceral wounds which were sutured, or through the operation wound, or possibly, the septic micro-organisms were conveyed into the peritoneal cavity by the bullet. The most interesting feature in this case is the procedure which was employed to discover the second perforation. The ordinary methods of examination proved utterly inadequate to discover the second visceral wound. Direct insufflation through the perforation which had been found, at once revealed the existence and location of the second visceral wound. Before the perforations were sutured, the colon below the wound was emptied of its gas, and the remaining portion of the gastro-intestinal canal was tested for additional perforations by direct insufflation through the anterior visceral wound.

This modification of the ordinary method of applying rectal insufflation of hydrogen gas in the diagnosis of perforations of the gastro-intestinal canal offers great advantages in that it prevents undue distension of the intestines, and when properly used renders it almost impossible to overlook a perforation sufficiently large to require direct surgical treatment. In cases of multiple perforations of the intestinal canal the lowest perforations can be readily located by rectal insufflation, but the remaining perforations should be pointed out by direct insufflation through the visceral wounds, taking the precaution to empty the sutured portion of the bowel of its gaseous contents, and after disinfection, if this becomes necessary, to return it into the abdominal cavity, thus preventing undue distension and extensive evagination.

Case 5. Penetrating Gunshot Wound of Abdomen; Inflation of Stomach and Colon with Hydrogen Gas; Foreign Body in Peritoneal Cavity; No Visceral Injuries Demanding Surgical Treatment. Recovery.—W. G., boy six years of age, was shot while he was standing on a box behind a saloon counter, the umbilicus reaching a little above the level of the counter. A bulldog pistol of 38-calibre was accidentally discharged at a distance of four feet from him. The bullet struck the counter to his left and in front, glanced, and penetrated the abdominal wall half an inch to the left of the linea alba and an inch and a half above the level of the umbilicus. After the shooting, the boy walked into an adjoining room without assistance, and the fact of his being seriously injured was only discovered on removal of his clothing. No shock. The patient complained of pain in the abdomen and vomited once, an hour and a half after the accident. The patient had eaten a hearty supper shortly before he was shot. No blood in the material vomited. Dr. Jürgens, the attending physician, applied a temporary antiseptic dressing over the wound, and administered small doses of morphia and atropia hypodermatically.

The accident occurred at 7 P.M., March 18, 1890, and on my arrival, seven hours later, his condition was as follows: Pulse 110 and full; face flushed, and although very quiet, complains of pain in the abdomen; liver dullness normal, both as regards location and extent. Wound of entrance plugged with omentum. The presence of omentum in the wound left no doubt that the bullet had entered the abdominal cavity, and from the location of the wound of entrance, and the probable course of the bullet from left to right and from below upward, I suspected that either the transverse colon or stomach had been perforated. Preparations were at once made for a laparotomy, so that in the event that the hydrogen gas test should yield a positive result the necessary operation should be done at once.

After the patient was thoroughly under the influence of chloroform, rectal insufflation of hydrogen gas was made, but when the colon had become fully distended it was discovered that the rubber balloon was leaking badly, consequently through insufflation could not be made. The insufflation of the colon, however, showed that this portion of the intestinal canal had escaped injury. The stomach was now inflated, and as this organ was fully distended without any leakage taking place, I was satisfied that no perforation existed. It still remained to determine whether the upper portion of the small intestine was injured, consequently an incision three inches in length, in the line of the wound of entrance, was made for the purpose of exploring the upper portion of the abdominal cavity for visceral injuries which might not have been revealed by the insufflations. A small shred of underclothing was found between the omentum and abdominal wall, near the track made by the bullet. After displacing the omentum upwards and to the left, a number of feet of the small intestine from the pylorus downward were examined with negative results. After a brief search, the bullet was found embedded in the space between the tenth and eleventh ribs on the right side, half way between the costal arch and the spine. The bullet was extracted through an external incision after pressing it outward with the index finger in the abdominal cavity. Only a small quantity of blood was found in the abdominal cavity. One external incision was closed in the usual manner, with the exception of a space for a small strip of iodoform gauze, which was inserted in the track of the bullet as far as the peritoneum. Ordinary aseptic dressing, retained in position by broad strips of adhesive plaster. The patient recovered promptly from the immediate effects of the operation, but soon developed symptoms of circumscribed peritonitis which lasted for a number of days, after which he recovered rapidly and completely. The external wound suppurated for a short time.

Remarks.—This case is of great interest, as it was demonstrated at the time of operation that the bullet had passed at least six inches obliquely through the upper portion of the abdominal cavity without inflicting any visceral injuries which required surgical treatment. The insufflations, although imperfect on account of a defective rubber balloon, proved of great value, as they made a direct examination of the stomach and colon for perforations unnecessary. The bullet undoubtedly passed between the transverse colon and the pyloric extremity of the stomach on its way from the point of entrance to the tenth intercostal space.

It is a comparatively easy task to find the perforations after the abdomen has been opened, if they are located in the small intestine, but perforations of the stomach and colon are often over-

looked during an ordinary examination, while their existence in these localities is promptly and infallibly revealed by insufflating these organs with hydrogen gas.

Case 6. Perforating Gunshot Wound of Abdomen; Through Insufflation with Hydrogen Gas Showing no Intestinal Perforations; Wound of Left Kidney; Expectant Treatment; Recovery.—S. W. A., thirty years of age, railroad conductor, was accidentally shot at 8 o'clock on the evening of April 3, 1890. The weapon used was a 22-calibre revolver. The physicians who were called were of the opinion that the bullet had entered the abdominal cavity, and advised prompt surgical treatment. An antiseptic compress was applied over the wound and morphia given hypodermatically. Almost immediately after the injury was inflicted the patient complained of a distressing pain in the region of the left kidney. No shock, or any other symptoms indicative of the existence of serious visceral injuries. Patient, accompanied by his physician, was transported on a cot by rail a distance of twenty-one miles, and arrived at the Milwaukee Hospital at 11:30 the same evening. At the hospital preparations had been made in the meantime for laparotomy.

Present Condition.—The wound of entrance was found near the tip of the cartilage of the seventh rib on the left side. The ragged opening, large enough to admit the little finger, was surrounded by numerous powder marks, showing that the shot was fired at very close range. Considerable emphysema in the immediate vicinity of the wound. Patient complains of pain in the wound and in the left lumbar region. Face flushed, pulse 90 and full; temperature normal. A small dose of atropia was given hypodermatically before chloroform was administered.

The abdomen and external wound were thoroughly disinfected. The track of the bullet was followed down to the peritoneal opening by an incision about three inches in length, which proved that the bullet had entered the peritoneal cavity. Under profound narcosis rectal insufflation of hydrogen gas was made. The colon became fully distended before the gas passed through the ileo-cæcal valve, showing that no perforations existed in this portion of the intestinal canal. The gas rushed through the ileo-cæcal opening with a distinct gurgling sound, after which the hypogastric region became prominent and tympanitic. The distension of the abdomen gradually ascending as the insufflation advanced, proved that the intestines were intact; finally, when the stomach became distended, an elastic tube was introduced, into the distal end of which a small glass tube was tied. As soon as the tube reached the stomach, gas escaped and was repeatedly lighted at the end of the glass tube. The hydrogen gas test had furnished positive evidence of the absence of intestinal perforations, and as

there appeared to be no danger from internal hæmorrhage, it was decided to pursue a conservative course of treatment. The ragged, discolored tissues lining the track made by the bullet through the abdominal wall were carefully dissected out, and the wound united with buried and superficial sutures, leaving a small space in the lower angle for drainage.

After the completion of the operation a catheter was introduced into the bladder, and a considerable quantity of bloody urine escaped. It was now evident that the bullet had injured the left kidney and that it was probably lodged in the tissues behind the organ. As the patient did not show any evidence of internal hæmorrhage, I concluded to await further developments in reference to the treatment of the kidney injury.

The urine contained blood in gradually diminishing quantity for two days, after which it remained normal both in quality and quantity. No untoward symptoms appeared, and the patient was fully convalescent and left the hospital two weeks after admission. He has since followed his occupation, and has suffered no inconveniences whatever from the presence of the bullet in the lumbar region.

Remarks.—The hydrogen gas test in this case proved a perfect success, as the through insufflation demonstrated in a most positive manner the absence of intestinal perforations. The bullet must have passed between the cardiac extremity of the stomach and the splenic flexure of the colon on its way through the abdominal cavity to the left kidney. Without the hydrogen gas test it would have become necessary to make an abdominal section and examine the whole length of the gastro-intestinal canal in order to show that no perforations were present, a procedure which might in itself have proved a cause of death.

The belief is almost general that a gunshot wound of the kidney should be treated by nephrectomy. In this case I decided to pursue an expectant plan on account of the small calibre of the bullet, the absence of symptoms indicative of serious internal hæmorrhage, and the existence of only a moderate hæmaturia. It was my intention, in case the injury of the kidney should result in a suppurative inflammation of this organ or its surrounding tissues, to make subsequently a lumbar nephrotomy or nephrectomy.

Objections to the Hydrogen Gas Test.

Like all other departures from the old and time-honored methods of diagnosis and treatment, the use of the hydrogen gas test in the discovery of visceral lesions of the stomach and intestines in perforating gunshot wounds of the abdomen will have to run the gauntlet of adverse criticism until, after a more extended experience in the hands of different surgeons, its merits will more generally be recognized. The principal objection, and the

one that has so far been mentioned most frequently, is that:

1. *Rectal Insufflation of Hydrogen Gas in the Diagnosis of Perforating Gunshot Wounds of the Abdomen Increases the Danger from Faecal Extravasation.*—The small intestines, even during active digestion, contain only a limited quantity of chyle, and in the numerous experiments on animals I have never observed that the gas forced out through the perforations any of the fluid or solid intestinal contents. Any one who has observed the process of inflation *ad oculum* will understand why it does not produce extravasation. Hydrogen gas being of much lower specific gravity than the fluid intestinal contents, lifts the distended intestinal loop to the highest possible *niveau* compatible with the mesenteric anchorage of the bowel; hence when the gas reaches a perforation, that portion of the intestine occupies a higher plane than the adjacent portions of the intestine, and the chyle by its own weight seeks a lower level, leaving the perforated part of the bowel empty of its normal contents as long as it remains distended with the gas. A number of experiments were made for the special purpose of showing that the fear of faecal extravasation taking place on applying the hydrogen gas test in the diagnosis of visceral wounds of the gastro-intestinal canal is unfounded. This will be shown most conclusively by the few experiments which I will detail briefly below.

The dogs used in these experiments had all had a full meal from three to four hours previously. Immediately after they were killed the abdomen was opened, and wounds corresponding in size with wound made by a 22-calibre bullet were made in different parts of the intestine before rectal insufflation was commenced.

Experiment 1. Duodenum.—Three wounds were made in this part of the bowel some distance apart, one on the free or convex side, one on the mesenteric side, and the third on the side at a point half way between the free and mesenteric borders. In a few seconds after the insufflation was commenced the gas had ascended as far as the duodenum and escaped from all the openings freely without causing a drop of extravasation, although this portion of intestine contained a considerable quantity of fluid at the time.

Experiment 2. Jejunum.—Three openings were made in this part of the small intestine large enough to insert the tip of the little finger. The perforations were diminished in size, but not closed, by bulging of the mucous membrane. The gas reached the perforations after moderate distension of the intestine on the distal side, and escaped freely from all the perforations without causing a trace of extravasation.

Experiment 3. Ileum.—Similar experiment with same result.

Experiment 4. Cæcum.—An opening large

enough to insert the tip of the little finger was made in the anterior wall of the cæcum, and although this part of the bowel contained liquid faeces, the gas did not force out any of the contents.

Experiment 5. Ascending Colon.—In this experiment the opening, similar in size, was made on the side of the bowel, but the escaping gas caused no extravasation.

Experiment 6. Transverse Colon.—Same experiment with same result.

Experiment 7. Sigmoid Flexure.—Lateral perforation large enough to correspond with a wound made with a 38-calibre bullet through which gas was forced by rectal insufflation, but no faeces escaped. Faecal extravasation occurred when the bowel was compressed above the perforation and the insufflation was continued.

These experiments only corroborate my observations made in over a hundred perforating gunshot wounds of the abdomen in dogs, and my clinical experience that the distension of wounded intestines with hydrogen gas does not increase the danger from faecal extravasation. The escape of solid faeces through a perforation by insufflation of gas is not to be expected, as the gas will pass between the solid mass and the intestinal wall, lifting the perforation away from the intestinal contents.

2. *Rectal Insufflation of Hydrogen Gas does not Infallibly Demonstrate the Existence of Visceral Wounds of the Stomach or Intestines.*—I have already stated that the hydrogen gas test has proved infallible in my hands, both in my experimental work and in the six cases which I have reported in this paper. There are two conditions under which hydrogen gas might pass the whole length of the gastro-intestinal canal without indicating the existence of a perforation:—(a) Plugging of the opening by a foreign body; (b) The perforation may be too small for the escape of the gas.

(a) *Plugging of Perforation by Foreign Body.*—Failure of the test from this source could only take place in exceptional cases, as when the stomach is wounded soon after the ingestion of a meal. A case has been reported where the stomach contained coarse solid food, in which the test resulted negatively. The patient died and the post-mortem showed that the perforation was closed by grains of rice which the patient had eaten shortly before he was shot. It is impossible to say whether in this particular case the foreign substance was driven into the opening by the bullet, or whether it was forced into it by the inflation. To prevent the latter occurrence in gunshot wounds of the stomach it is absolutely necessary to either evacuate the stomach by an emetic shortly before the test is applied, or to place the patient in such a position during the inflation that the wound in the stomach will occupy the highest level, as when this is done the hy-

drogen will lift the perforation away from the solid contents and thus effectually prevent plugging of the perforation. If the location of the probable wound is not known, the patient should be placed alternately in different positions during the insufflation. If, from the course of the bullet it is probable that the stomach has been wounded the inflation should not be made *per rectum*, but directly through a stomach tube, as inflation of this organ can be made more effectually by this direct method.

There is absolutely no danger that mechanical closure of the perforation by the impaction of a foreign body will ever interfere with the reliability of the hydrogen gas test in gunshot wounds of the intestines.

(b) *Small Size of Perforation.*—In every case of gunshot wound of the stomach or intestines, the size of the perforation is diminished by eversion of the mucous membrane which either partially or completely plugs the opening. The permeability of the perforation will not only depend on the size of the opening, but it is also influenced by the thickness of the wall of the organ at the seat of injury. The wall of the intestinal canal diminishes in thickness gradually from the stomach downward to the ileo-cæcal region. A bullet wound of the stomach of the same size as one in the lower portion of the ileum will be more securely closed spontaneously by prolapse of mucous membrane, and will consequently be less likely to be permeable to the escape of gas when insufflation is practiced.

I made an extensive series of experiments on dogs with missiles of small calibre, both for the purpose of determining the size of perforation which makes laparotomy necessary and also to ascertain the size of the visceral wound which will permit the hydrogen gas to escape into the peritoneal cavity when insufflation is made for diagnostic purposes. In reference to the first point my experiments demonstrated conclusively that the size of the missile is absolutely no indication of the size of the perforation. I used missiles varying in size from a No. 8 shot to a 22-calibre bullet. Cartridges containing an ordinary charge of powder were loaded with from four to twelve shot and the shooting was done with an ordinary 12-gauge single barreled shot-gun at a distance of ten feet, with the dog strapped upon a table and placed in erect position, and the umbilicus for a central mark. Shot of all sizes invariably penetrated the abdominal wall and passed through the peritoneal cavity. A record was kept of the exact location of the wounds of entrance and of the number of shots which entered the peritoneal cavity in each case. A number of the animals died within half an hour to two hours after the shooting and the necropsy invariably revealed hæmorrhage as the immediate cause of death, the shot having injured some of the large abdominal

vessels or vascular organs, as the spleen, liver or kidneys. Death from this cause occurred less frequently if shot of fine calibre was used, yet in several instances it was found that No. 8 shot, which are not larger than a mustard seed, caused death from hæmorrhage when the inferior vena cava or one of its large branches was injured.

A number of dogs recovered without treatment after having been shot transversely through the abdomen with a 22-calibre conical bullet. These animals were killed from one to several weeks after the shooting, when from one to four healed perforations were found. The point of perforation always presented the same characteristic appearance, a nipple-like elevation on the serous surface and a corresponding conical depression on the mucous surface. What occurred in these cases was temporary closure of the perforation by plugging of the visceral wound with mucous membrane and the formation of a cover of new tissue over the apex of the prolapsed mucous membrane. Dogs that were wounded with shot finer than No. 4 seldom died from the effects of the visceral injuries, and some of these animals were shot three different times at intervals of one to two weeks, producing in this way dozens of minute perforations in different portions of the gastro-intestinal canal, all of which healed without surgical or any other treatment. In the animals that died from the visceral injuries the necropsy always showed the existence of perforations larger than are ordinarily produced by a 22-calibre bullet. These large perforations were either caused by two shots passing in close proximity through an intestinal loop making one common wound, or they were the result of a laceration caused by the shot grazing the convex margin of an intestinal loop. In this manner I have seen a No. 2 shot tear an opening in the bowel large enough to insert the tip of the index finger.

The next object in this series of experiments was to determine the size of the smallest wound of the stomach or intestines which could be discovered by means of the hydrogen gas test without opening the abdomen. The test was applied in perforating wounds of the abdomen inflicted with shot varying in size from No. 8 to "B.B.," the latter of which corresponds with an 18-calibre bullet. Rectal insufflation was practiced immediately after the shooting. All animals in which the hydrogen gas test gave a positive result died, that is, if the gas escaped either through one of the perforations in the abdominal wall, or if it escaped into the peritoneal cavity in sufficient quantity to be recognized by physical symptoms, such as free tympanites, as nothing was done in the way of treatment in all of these cases. The post-mortem invariably showed a perforation or laceration of the intestines or stomach too large to become temporarily closed with a plug of mucous membrane; hence infection of the peri-

toneal cavity and death from septic peritonitis followed in from one to three or four days.

In the animals in which the test resulted negatively, and these included some in which shot of large calibre were used, peritonitis did not ensue, and if hæmorrhage did not prove a source of danger, they recovered without any untoward symptoms.

This to me proved an object of great interest and far-reaching practical value, as it satisfied me that the hydrogen gas test can not only be relied on when it is necessary to interfere in cases of perforating gunshot wounds of the abdomen, but that it also furnishes the only safe and positive indication for non-interference.

In all cases where the test resulted negatively, the insufflation was continued until the gas escaped from the elastic tube which was inserted into the stomach, and the presence of the escaping gas was demonstrated by lighting it at the end of the tube. I have frequently had opportunities to observe that perforations made with a 18-calibre shot were impermeable to the insufflation and that occasionally considerable force had to be used to make the gas escape through a wound made with a 22-calibre bullet. These are the perforations which will heal spontaneously and through which infection of the peritoneal cavity is not likely to occur, because escape of the gaseous and liquid contents of the intestines does not occur.

3. *The Hydrogen Gas Test Renders Reduction of Intestines after Laparotomy more Difficult or Impossible.*—This objection can only apply to cases of wounds of the stomach or of the upper portion of the small intestine. I have already insisted that when, from the course of the bullet, we have reason to believe that the stomach has been injured, this organ should be inflated directly through an elastic tube and not by rectal insufflation. If the test results positively, the indication for a laparotomy has been furnished; if otherwise, the nearest hollow organ, the colon, is examined for perforations by rectal insufflation. In the absence of perforations below the ileo-cæcal valve, the insufflation is extended as far as the stomach, and if the result is positive and the perforation is located high up in the intestinal canal, the intestines below the first perforation will be found moderately distended upon opening the abdomen. After the last perforation has been found, much of the gas can be evacuated through this opening. By resorting to Kümmels's method of replacing the intestines, no difficulty is experienced as a rule in this step of the operation. In all of my cases, and in all of my experiments I have invariably succeeded in replacing the intestines without much loss of time and without doing any damage. If high insufflation has been made and if after suturing all of the perforations, any difficulty should be

experienced in replacing the intestines, there should be absolutely no objection to making a small incision into one or more of the most distended loops of the inflated intestine and after evacuating the gas closing then by one or two superficial sutures.

4. *Hydrogen Gas Test is Unnecessary.*—It has been asserted that the hydrogen gas test is superfluous because every perforating gunshot wound of the abdomen is necessarily complicated by visceral injuries which require treatment by laparotomy. This objection to the use of the hydrogen gas test has already been disposed of, as I have shown experimentally and clinically that in a fair percentage of cases of perforating gunshot wounds of the abdomen the bullet inflicts no serious visceral injuries, and that such cases will recover, as a rule, without laparotomy.

It has also been stated that the use of the hydrogen gas test is unnecessary in detecting the perforations after the abdomen has been opened, as it is claimed that the perforations could be readily found by examining the intestinal loops lying in the course of the bullet. The adoption of this advice could not fail to lead to frequent errors of diagnosis and disastrous results in treatment, as the injured part of the bowel changes its relative position in the abdominal cavity very soon after the injury has been inflicted. This is especially true of that portion of the small intestine supplied with a long mesentery.

In order to show that a perforated intestinal loop will in a short time wander away from the place it occupied when struck by the bullet, I made the following experiments:

Experiment 1.—Medium sized male dog. The abdomen was opened by a median incision, exactly four inches in length; the omentum pushed to the left of the median line and sutured to the left margin of the abdominal wound. The intestines being disturbed as little as possible, two points of intestine corresponding exactly to the upper and lower angles of the incision were marked by drawing a black thread through the serous coat which was loosely tied and cut short. The external incision was sutured and the dog was killed eighteen hours afterwards. The wound was found firmly agglutinated and the omentum adherent to the incision. Enlarging the incision and leaving the intestines undisturbed, the upper marked loop of the intestine was found displaced two inches to the right of the median line and one inch and a half downwards and backward, being also covered by another intestinal loop, and the thread being directed toward the spine. The lower marked point was found one and one-half inches to the left, and one and one-fourth inches downwards, behind the bladder with the thread also directed towards the spine.

In the three subsequent experiments, the ab-

dominal incision was made fully six inches in length and the omentum was left undisturbed, and in the middle line two loops of the intestine, four inches apart, were marked, one with a white, and the other with a black thread which were passed through the serous coat and loosely tied. The intestines were exposed by a rent in the omentum four inches in length. On the margin of the abdominal incision a small transverse cut in the skin was made to indicate the exact position occupied by the marked intestinal loops.

Experiment 2.—Large female dog. Experiment described as above. Animal killed after twelve hours. Abdomen opened by incision from sternum to pubes and transversely at level of umbilicus. The lower marked loop was found displaced upwards three inches, and half an inch to the right of the median line. Thread in same direction as when introduced. Upper loop displaced downwards two inches, thread directed laterally, covered by another loop of intestine.

Experiment 3.—Large male dog. Killed six hours after marking position of intestinal loops. Examination showed that the marked points were transposed, upper loop now being the lower, displaced four inches downwards and half an inch to the left of the median line. Lower loop displaced two inches upwards and buried underneath two layers of intestinal coils.

Experiment 4.—Large female dog. Killed two hours after opening the abdomen. Upper marked point displaced an inch and a half downwards and an inch to the left of the median line, and covered by a loop of intestine; lower loop displaced one inch downward, and was pushed half an inch to the left of the median line.

These experiments show conclusively that in making laparotomy for perforating wounds of the abdomen, the wounded intestinal loops are seldom found in the position they occupied the time they were hit by the bullet. Even two hours after the injury an intestinal loop perforated when it occupied a place corresponding with the level of the umbilicus may be found in the cavity of the pelvis, or several inches above and to the left or right of the median line.

The hydrogen gas test is of the greatest value in locating the perforation after the abdomen has been opened, as without it, one or more perforations may be overlooked and become a cause of death in cases that might have recovered had the perforations been discovered and sutured. From the inaccessibility of the duodenum perforations of this part of the intestinal canal are very liable to be overlooked. Two cases have recently been reported where this occurred. Bernays, of St. Louis, made a laparotomy for perforating gunshot wound of the abdomen, sutured several perforations, and overlooked, as the post-mortem showed, a large perforation of the duodenum.

The second case is related from the clinic at

Basle. A man was brought into the hospital with a penetrating stab wound of the abdomen. The wound was enlarged sufficiently to permit of eventration. Inch by inch the small intestine was examined, but no perforation was found. The man died of septic peritonitis two days later. The post-mortem revealed a wound of the duodenum over an inch in length which had been overlooked, and which was the direct cause of the peritonitis and the indirect cause of death. It is needless to say, that had the hydrogen gas test been applied in these cases before or after the abdomen was opened, the perforations would have been discovered and sutured, and in all probability, both patients would have recovered.

In all cases of perforating gunshot wounds of the abdomen the whole length of the gastrointestinal canal should be tested by ballooning the stomach and intestines before the abdomen is closed, in order to guard against the possibility of leaving an undiscovered perforation.

(To be concluded.)

MEDICAL PROGRESS.

THE ANTISEPTIC VALUE OF ANILIN (PYOCTANIN MERCK'S). — DR. O. PETERSON (*St. Petersburg Med. Wochenschr.*) adds his experience with this drug to the not inconsiderable literature that has accumulated since the appearance of Stilling's brochure early in the current year. The substance was obtained directly from Merck, and consisted of pencils of violet and yellow anilin, a powder containing 2 per cent. solutions 1:2000, 1:1000 and 1:100. The observations were made in the ambulatory and in the Alexander hospital, as well as in private practice. The remedy was employed in 42 cases, presenting soft chancre 20, indurated 8, syphilitic ozena 4, gummatous ulcers 5, ecthyma syphiliticum 1, keratitis 4, blennorrhœa 1, conjunctivitis 1, after circumcision 4. Dr. Peterson devoting special attention to syphilis, has used the drug largely in cases where iodoform has formerly been employed, in all these cases he has had equally good results without the unpleasant odor that at times prevents the use of this drug. Especially in soft chancre were excellent results noted, and these were compared with a series of similar observations upon aristol, and iodide of bismuth. The latter drugs worked with much less energy than pyoctanin and the results were not favorable.

Especially good results were observed in syphilitic ozena accompanied by a foul discharge. The entire mucous membrane of the nose was penciled with a 1 per cent. solution. After three or four days the fetor disappeared and healing took place.

The article closes with the statement that

the drug has marked antiseptic properties and is equally useful in septic as well as aseptic wounds. It is useful in eye diseases as well as in venereal sores. Toxic or unpleasant symptoms have not been noticed up to the present. Further observations are earnestly desired, as the drug has a considerable range of application and may prove of great value.

BROMOFORM IN WHOOPING COUGH.—H. NEUMANN (*Therapeutische Monatshefte*, July, 1890) describes the results obtained in treating 61 cases of pertussis with bromoform. The dose, from one to three drops suspended in sweetened water, was continued from several days to two or three weeks. The results in most cases were favorable in that there was a diminution in the number, as well as the severity of the seizures. In some cases it seemed to lessen the length of the disease. The bromoform is readily taken by children as the taste is not unpleasant, and in no case were unpleasant symptoms noted from the use of the drug.

Neumann also refers to the pleasant effect of small doses of phenacetin in this condition. He employed this drug in nine cases with excellent effect.

He closes this article with the statement that the therapeutics of pertussis is still symptomatic as the drug has not yet been discovered that will destroy the germs of the disease and thus stop an attack in its incipency. But we do have drugs that affect favorably the inflamed mucous membrane, or lessen reflex action, and with these we can reach an individual and symptomatic treatment of the disease, which will greatly lessen the gravity of the symptoms. From this point of view a further study of the remedies for whooping cough is recommended until such time as the specific drug presents itself.

NINE CASES OF UTERINE MYOMATA TREATED BY APOSTOLI'S METHOD.—F. ENGELMANN. (*Deutsche Med. Wochen.*, July 3.)—These cases were taken unselected from a number which regularly visited Kreuznach for its curative regimen, and included patients rather well situated in life, and in whom a host of other procedures had been tried with varying success. The treatment in all cases was adopted only at the suggestion of the patients, who had heard of Apostoli's method and results. From the result of his experience with this treatment, E. makes the following conclusions: 1. Involution of the growth, evidenced by diminution in its bulk, could only be positively demonstrated in isolated cases, and was not considerable. 2. The principal effect of the electrical treatment was upon the diseased mucous membrane; it was in all cases brought to a nearly normal state, and the symptoms induced by it—bleeding, fluor albus—favorably influenc-

ed or entirely removed. 3. Favorable effect upon the symptoms of compression could always be obtained as well as improvement in nervous symptoms. 4. The treatment as a whole, does not accomplish more than methods heretofore in vogue; but it should still be regarded as a valuable adjunct to our armamentarium against uterine myomata.

The apparatus used by the author was a 24-cell portable modified Leclanché battery, which Apostoli had highly recommended to him. In all his manœuvres he had followed exactly in the wake of the Parisian master. Much valuable aid was derived from a galvanometer graded to 250 milliampères. He considers a rheostat superfluous. The external clay electrode as recommended by Apostoli was found the most serviceable, after using all the modifications vaunted by the various authorities. The patients all said that they experienced the least pain from the clay electrode. He used only platinum needles for electro-puncture, in no case steel ones. The latter are cheaper and sharper, but cannot be used when the anode is to be brought into action. Needle and sound should always be introduced without a speculum, to gain the certainty afforded by the controlling finger. The author was surprised by statements that currents of 200 and 250 milliampères could be safely used. In most cases he could not go over 150 or 160 milliampères, frequently not so high. He was not able to note a diminution in the pulse rate during the sittings. The most frequent symptom next to pain—which was never very great—was a not unpleasant sensation of fatigue, in one case increasing to somnolence. Apostoli and others lay great stress upon the importance of patients taking an hour's rest after the application, and then to go home in a conveyance. This precaution is especially recommended after electro-puncture. The author found this an unnecessary precaution. He repeated the applications every other day. He believes that he might have had more success if he could have protracted the treatment. At the same time he treated two cases constantly for six months without achieving anything as regards the diminution in the size of the growth. Pain was in all cases favorably influenced by the electrical treatment, in one case with astonishing promptness. The constipation which generally existed was uniformly removed. The general condition of the patient was remarkably bettered.—*Am. Jour. Obstetrics*.

EARACHE.—Take five parts of camphorated chloral, thirty parts of glycerine and ten of sweet almonds. A piece of cotton is saturated and introduced well into the ear, and it is also rubbed behind the ear. The pain is relieved as if by magic, and, if there is inflammation, it often subsides quickly.

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SATURDAY, SEPTEMBER 6, 1890.

THE ANILIDES IN PUERPERAL FEVER.

Antipyrin, antifebrin, exalgine and similar drugs are used extensively in the systemic treatment of puerperal fever. They are employed chiefly to combat pyrexia. Of the fact of the widespread use of these agents in childbed fever, we are convinced from numerous allusions in the medical press and from sufficient personal observation.

This therapy is most extraordinary, when we consider the blood changes in septicæmia, the imperfect state of our knowledge as regards the exact physiological action of the anilides, and the number of mishaps that have already occurred as a consequence of their use.

Passing over the researches of PANUM, the school of ALEXANDER SCHMIDT and others, as regards the destructive effects of "putrid poison" on the form elements of the blood, we come to the results of the investigations of modern bacteriology. KOCH writes: "The comma bacilli are able to exert a destructive influence on form elements of the blood, probably also on other cells." SCHEURLÉN has shown that the sterilized, inspissated product of metabolism of the *staphylococcus aureus* makes the blood the color of lac-dye and dissolves the corpuscular elements, an observation confirmed by BEHRING. Further, these ptomaines have the property of immediately destroying hæmoglobin. BUCHNER and NISSEN have proved that while normal blood possesses a germicidal power, this ability is readily lost. Buchner writes: "Blood is without effect in the

destruction of bacteria after one hour's elevation to a temperature of 55°, as already found by Nissen. In such blood, the increase of the disseminated bacteria begins at once. The blood has become a culture medium. And at the same time, solution of a large portion of the red blood corpuscles occurs." GOTTSTEIN'S¹ experiments tend to show that the destruction of the red cells in circulating blood has a similar effect in the inhibition of any germicidal action. The chief conclusion of his very interesting investigation is as follows: "Certain bacterial products, especially those of putrefaction, possess the property of destroying red blood corpuscles. A destruction of the red corpuscles, that inhibits germicidal action in defibrinated blood, also effects in the living organism such a lowering of resistance, that bacteria, that have no, or only local pathogenic properties for the particular organism, now attain the ability to stick securely in external wounds, and to increase within the circulation to the degree of septicæmia." In his experiments upon rabbits, guinea pigs and mice, in addition to the injection of the bacteria of splenic fever and chicken cholera, he used hydracetic (acetyl-phenylhydracin), pyrogalllic acid and other blood poisons. The most striking case was that of guinea pigs injected with chicken cholera. These animals infected with chicken cholera, and injected with hydracetic in not deadly doses, died of septicæmia, while other animals subjected simply to the subcutaneous injection of the chicken cholera remained entirely immune. In this connection Gottstein remarks that in all fevers dependent upon septic conditions great caution is demanded in the exhibition of those remedies that injure the cellular elements of the blood.

Now, as before remarked, our knowledge of the exact physiological action of the anilides is very imperfect, but the weight of evidence, collected from observation and experiment, is very much in favor of the view that these agents, even in small doses, are liable to affect the form elements of the blood. Antipyrin, according to LÉPINÉ, produces "in dogs trembling, apathy, weakness and fall of temperature, with loss of excitability of peripheral nerves. The arterial blood became, in some cases, of a dirty brown color, loaded with methæmoglobin; the corpus-

¹ "Beiträge zur Lehre von der Septicæmia," Deutsche Medicinische Wochenschrift, No. 24, 12 Juni, 1890.

cles were said, however, to be unaltered either in number or shape, and the serum was not tinged. Analysis of the gases of the blood showed great deficiency in oxygen. Large doses depressed the heart action." Exalgine, according to BINET, produces similar blood changes in cats and rabbits, together with much salivation. Cyanosis is a marked symptom of poisoning by aniline, the base from which all these bodies are derived.

In human beings, however, hæmoglobinuria has been recorded as a symptom of antipyrin poisoning, and there is evidence to show that the anilides, not necessarily in large doses, do affect the integrity of the blood. For the details of two remarkably clear cases of poisoning by anilides in small doses (exalgine and antifebrin), we beg to refer our readers to an excellent paper by T. JESSOP BOKENHAM and E. LLOYD JONES, that appeared in the *British Medical Journal* of February 8. Among the symptoms in these cases, were cyanosis, great dilatation of blood-vessels, small, regular, compressible rapid pulse. Urinary changes were not observed.

In the light of all the evidence, it is impossible at present to justify the exhibition of the anilides in puerperal fever. Indeed, in view of the effect upon the blood and circulatory apparatus, it is even in order to question the propriety of using these drugs in the alleged mitigation of the pain of parturition. We advisedly employ the expression, "alleged mitigation," since up to the present, the reports as regards the analgesic value of the anilides in labor, while contradictory, yet indicate an uncertain, and very limited power.

The anilide treatment of puerperal fever receives its severest condemnation, when it is remembered that for years the profession has been in the possession of a highly successful plan of treatment, and that after all, the use of these dangerous artificial drugs is a work of supererogation. As systematized some years ago by MAX RUNGE, this plan consists chiefly in the administration of maximum quantities of food and alcohol, combined with spongings with cold water.

Within the past six months, an example of sapræmia has come under our personal observation, in which the inhalation of oxygen apparently effected an immediate and permanent reduction of pyrexia. The gas was exhibited some hours after adequate local disinfection.

Certainly, this agent is harmless, and there is presented in the researches of GOTTSTEIN an eminently rational indication for its use. If certain blood poisons, like hydracetic and the anilide reduce the physiological resistance of the blood, and so favor the increase of bacteria, why may not oxygen augment the germicidal action of the blood?

THE AMELIORATION OF LEPROSY IN INDIA.

The careful consideration that leprosy in India, especially, is receiving by special commissions and other agencies in Great Britain, has already brought about marked improvement in the condition of many patients. The two leading thoughts, at the present time, appear to be, first, the home repression of vagrancy among lepers, and, second, the protection of the children of lepers. These commend themselves to us as very practical and practicable first steps toward the prophylaxis of the disease. A bill has been drawn up, designed to establish governmental retreats into which the vagrant class shall be gradually gathered, and in which the sexes shall be separated. In many places, in India, no lazarettoes of any kind exist, and are not only much needed for the protection of the natives from the roving lepers who spread the disease, but also for the comfort and keeping of the lepers themselves. Next in importance arises the question of the care of the children, not yet infected, of leprosy parents. It has been pointed out by DR. MONRO, a careful student of this question, that "leprosy has never been proved to be transmitted without contact, and is not constantly transmitted to their families, even when both parents are diseased, and it seldom affects more than one child in the same family." SIR MORELL MACKENZIE has expressed the opinion that the hereditary transmission has scarcely any existence. It is, nevertheless, highly important to take away from these children the risk of contagion, and for this purpose a few homes have been established, in connection with existing asylums for adults. A society in Scotland is actively exerting itself in this direction; but it must, of course, be a labor of many years before the ground can be thoroughly covered. The medical care of lepers, the questions of nursing, diet, and the treatment of the many distressful symptoms of the disease, have been the means of undoubted bene-

fit to many hundreds of cases that have been brought within the reach of the medical missions and other retreats of European and American origin.

IS DIDACTIC TEACHING LOSING GROUND?

The part played by the eloquent lecturer, in our medical curriculum, is designed to greater desuetude, if the indications that come to us from abroad are any criterion. The General Medical Council of Great Britain has recently taken action which will serve for a milestone, for many a year; it is virtually a rebuke to all those that place the restrictions upon graduation if they continue to exact a large number of attendances upon didactic teaching. The superabundance of systematic lectures is out of proportion to the requirements of the present age, as will be seen by the resolution adopted by the General Council, as follows: "That regulations requiring attendance on systematic courses ought not to exceed a demand for more than *two or three* lectures weekly in any one course, nor for an attendance upon more than *two or three* lectures in any one day." The ability of the modern student to sit all day in the lecture-room is challenged, and this new doctrine will, it is said, be an especial relief to the students in the Scottish universities, where the hold of the lecturer, as the chief means of imparting instruction, still remains a strong and dominant one. SIR JOHN SIMON, one of the Council, remarked that it was absurd to require a student to attend lectures on subjects which might be equally well, if not better, learned from the text-books. And DR. MITCHELL BANKS observed that the Scotch lecturer appeared to be a sort of man-eating tiger amongst the lecturers; and he had heard of persons being preached to death by wild curates, but an even greater catastrophe would be to be lectured to death by Scotch professors, a fate which he himself, thanks to a naturally robust constitution, had narrowly escaped. The advocates of this action in the Council were not so much in favor of shortening the actual time given to the required subjects, but of allowing the professor to substitute for lectures other and more practical means of imparting knowledge, and to give time to class examinations and laboratory work.

EDITORIAL NOTES.

STORIES OF A COUNTRY DOCTOR.—This clever volume by Dr. Willis P. King, formerly president of the Missouri State Medical Association, is true to its title, and has the advantage of suitable illustration. It contains nearly four hundred pages, issued from a printing house in Kansas City. This book will commend itself to the profession, above the few others of its class that have been attempted in this country, because of the keen observation, joined to a subtle sense of humor, possessed by its author, who is able with dignity and friendliness to give an insight into the curious corners of rural experience. It must have required no little courage on the part of Dr. King to publish these recitals, but he has proved himself the master of the situation and may expect good degree of success and solid returns.

THE PHILADELPHIA COLLEGE PRIZE AWARD.—The Alvarenga prize of the College of Physicians of Philadelphia, consisting of one year's income of the bequest of the late Dr. Alvarenga, of Lisbon, has been awarded to Dr. R. W. Philip, of the Victoria Dispensary for Consumption at Edinburgh, for his essay on pulmonary tuberculosis, which will presently be published by the College.

BUBONIC PLAGUE IN TURKEY.—The *New York Medical Journal*, quoting from the *British Medical Journal*, announces that the Imperial Sanitary Board of Turkey, has information of an outbreak of the plague at Kale-Daragehan, a village of 280 inhabitants, and that forty-two persons have been attacked, with twenty-six deaths already. The reporter of the cases, Dr. Constantinides, personally observed many of the patients. He states that the disease is marked by inguinal, axillary, and retro-auricular buboes, with a temperature of 104° F. and a bluish cutaneous rash.

A NEW MEDICAL JOURNAL.—The first number of *The Journal of the State Medical Society of Arkansas* is just received. At the last annual meeting, in answer to a recommendation of President Orto in his annual address, a committee was appointed to report upon the advisability of publishing the proceedings of the State Medical Society in the form of a monthly journal. The committee, consisting of J. M. Kellar, D. C.

Ewing, and L. P. Gibson, reported in favor of such action, and as the result of its adoption by the Society, the first number of the journal is presented to the profession under the editorial supervision of Dr. Lorenzo P. Gibson. It is published solely in the interests of the Society, and has no other business relation. Each number will contain forty-eight pages of reading matter, and will command the services of a number of medical men who can well represent the Southwest in the field of medical journalism. Its financial success is already assured. We welcome it to our list of exchanges and bespeak for it a successful career.

OBSTETRICS AND GYNECOLOGY.—The American Association of Obstetricians and Gynecologists will hold its next annual meeting in the hall of the College of Physicians in Philadelphia, September 16, 17 and 18, 1890. E. E. Montgomery is President and William Warren Potter Secretary. A general invitation to all physicians interested in these specialties is cordially extended to attend the several sessions.

SURGEON-GENERAL BAXTER.—Colonel Jedediah H. Baxter has received the appointment of Surgeon-General of the U. S. Army, the nomination by the President having received the unanimous concurrence of the Senate. His father, Portius Baxter, formerly represented his State in Congress. Surgeon Baxter was born in Vermont in 1837. He is a graduate of the Vermont University. He entered the Army as Surgeon in the Twelfth Massachusetts Regiment of Volunteers in 1861. From that date to this he has been in continuous service, at all times holding positions of prominence and responsibility. He was appointed Chief Medical Purveyor by General Grant in 1872, which position he has held up to the date of this last promotion. His able and continuous service in the Army for nearly thirty years receives a fitting recognition, as the highest honor in his department in the gift of the nation is thus conferred upon him.

THE VALUE OF INTERNATIONAL CONGRESSES.—The Tenth International Congress at Berlin came to a successful closing, and its volumes of Transactions will bear witness to the value of the contributions there made. The special practical advantages to be derived from such international gatherings lies not so much in special work there

accomplished. The press, rather than the forum, is more serviceable in the promulgation of scientific truths; but the opportunity thus presented for the meeting of men of note, face to face, is one which will lend inspiration to their future efforts, and will give them an added value. Such meetings beget a world-wide interest in all medical questions; they develop a brotherhood of the profession; they broaden and strengthen the great work of scientific investigation which must be incident to medical progress. The profession will look forward with unwonted interest to the next great assemblage in the city of Rome, not soon forgetting the notable assemblage at Berlin, and the unbounded hospitalities which were so freely accorded.

THE PREVALENCE OF CHOLERA.—We have nothing of special import as to the spread of this disease beyond that which was noted in the last issue. It now prevails generally along the Arabian shores of the Red Sea, in Cairo, and along the southern shore of the Mediterranean. It has appeared in various provinces in Spain, advancing to the borders of Portugal. We hear nothing later of its supposed appearance in London.

AN ARMY MEDICAL BOARD will be in session in New York City, N. Y., during October, 1890, for the examination of candidates for appointment in the Medical Corps of the United States Army to fill existing vacancies. Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before October 1, 1890, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between 21 and 28 years of age, and a graduate from a Regular Medical College, as evidence of which his diploma must be submitted to the Board. Further information regarding the examinations may be obtained by addressing J. H. Baxter, Surgeon-General U. S. Army, Washington, D. C.

TOPICS OF THE WEEK.

RESULTS OF BACTERIOLOGICAL RESEARCH.

Upon this subject we quote the concluding portion of the able address of Dr. Robert Koch, at the late meeting of the International Medical Congress at Berlin. His words are as follows:

"Up till now I have purposely left one question untouched, although it is precisely the one which is most frequently, and not without a certain amount of reproach, addressed to bacteriologists. I mean the question of what profit all the weary labor which has up to the present been expended on the investigation of bacteria has been? Properly speaking, no such question should be asked, as true research follows its own way without being misled by the consideration whether its labors will yield immediate advantage or not. I cannot, however, deem this question utterly unwarranted in the present instance, as very few of those who occupy themselves with bacteriological research leave practical objects entirely out of sight.

"The practically available results obtained up to the present by means of bacteriological research are by no means so despicable as some askers of the above question think.

"I need only refer to that which has been accomplished in the domain of disinfection. Just at this point there was previously no foothold; men worked completely in the dark, and often enough large sums were spent in useless disinfection, leaving altogether out of account the indirect harm done in other ways by the neglect of hygienic precautions. Now, on the other hand, we possess certain knowledge by means of which we are able to test the efficacy of disinfectants, and if much still remains to be done in that province, we can at least affirm that the disinfectants now in use, so far as they have been tested, efficiently fulfil their object.

"Among the practical results might also be reckoned the application of bacteriological methods to the control of water filtration, as for that purpose nothing else can take the place of these methods. Connected herewith are the discoveries arrived at by means of bacteriological research as to the filtering properties of the soil, and the important consequences resulting therefrom as to the employment of ground water for water supply, and for the proper construction of wells. In the same way as in the case of water, bacteriological methods can be applied to the control of milk, especially as far as it is destined for the nourishment of children, as well as to the examination of other alimentary substances and other things in common use which are open to the suspicion of infection. The examination of the air in sewers, and the confirmation which the generally accepted opinion as to the injuriousness of sewer gas has thereby received; the examination of the air in schoolrooms, the recognition of pathogenic bacteria in alimentary substances, in the soil, etc., stand, as it is impossible to deny, in intimate relation with practice. Among the practical results I might further count the possibility which bacteriology has supplied of diagnosing sporadic cases of Asiatic chol-

era, and the first stages of pulmonary tuberculosis, the former being of importance for the prophylaxis of cholera, the latter for the timely treatment of tuberculosis.

"All these things, however, are advantages which can only indirectly be employed in the struggle against bacteria. We have hardly any directly acting, that is, therapeutical, agents to place beside the indirect ones. The only things which can be adduced in this connection are the results which Pasteur and others have obtained by means of protective inoculation in rabies, anthrax, quarter-evil, and swine erysipelas. With regard to antirabic inoculation, the only one which is applicable to man, it may be objected that the cause of rabies is not yet known, and probably may not be of a bacterial kind, and that this preventive inoculation should not be placed to the credit of bacteriology. Notwithstanding this, that discovery grew on bacteriological soil, and could not have been made without the antecedent discoveries of protective inoculation against pathogenic bacteria.

"Although in these directions, in spite of endless toil, bacteriological research has only such insignificant results to show, I am nevertheless not of opinion that this state of things will always continue. On the contrary, I am convinced that bacteriology will one day be of the greatest importance from the therapeutical point of view also. It is true, I look for relatively smaller therapeutical results in the case of diseases with a short incubation period and a rapid course. In these diseases, as for example in cholera, the chief reliance will always have to be placed on prophylaxis. I am thinking more of diseases of less rapid course, as these offer more points of attack to therapeutic enterprise. And there is scarcely a disease which, partly on this ground, partly on account of its far surpassing all other infectious diseases in importance, so challenges bacteriological investigation as tuberculosis.

"Moved by these considerations, very soon after the discovery of the tubercle bacilli, I set about seeking for substances which could be used therapeutically against tuberculosis, and I have pursued this search, which has, of course, been often interrupted by my other occupations, perseveringly up to the present. In the belief that there must be a remedy for tuberculosis, I do not by any means stand alone.

"Billroth has, in one of his last writings, expressed himself with all possible distinctness to the same effect, and it is well known that the same object is aimed at by many investigators. It seems to me, however, that the latter have not as a rule followed the right way in their investigations, inasmuch as they have begun their experiments on man. To that I ascribe the fact that everything which people have believed themselves to have discovered in that way—from benzoate of soda down to the hot-air treatment—has proved to be a delusion. Experiments must be made in the first place not on man, but on the parasites themselves in their pure cultures; even if substances have been found which have the power to check the development of tubercle bacilli in the cultures, man should not forthwith be chosen as the subject of experiment. But the question whether observations which have been made in a test tube hold good

also in living animal bodies should first be settled in animals. Only if the experiments on animals have proved successful, should the method be tried on man.

"Proceeding according to these rules I have in the course of time tested a very large number of substances to see what influence they would exert on the tubercle bacilli cultivated in pure cultures, with the result that not a few substances have the power, even in very small doses, of hindering the growth of tubercle bacilli. More than this, of course, a remedy cannot do. It is not necessary, as has often been erroneously assumed, that the bacteria should be killed in the body; in order to make them harmless to the body it is sufficient to prevent their growth, their multiplication.

"I have proved the following substances to be remedies which hinder such growth even in very small doses (to mention only the most important):—A number of ethereal oils; among the aromatic compounds, β naphthylamin, paratoluidin, xylinin; some of the so-called tar dyes, namely, fuchsin, gentian, violet, methyl blue, chinolin yellow, analine yellow, auramin; among the metals, mercury in the form of vapor, silver and gold compounds. The compounds of cyanogen and gold were especially conspicuous, their effect surpassing that of all other substances; even in a dilution of 1 to 2 millions they checked the growth of tubercle bacilli. All these substances, however, remained absolutely without effect if tried on tuberculous animals.

"In spite of this failure I have not allowed myself to be discouraged from prosecuting the search for growth-hindering remedies, and I have at last hit upon a substance which has the power of preventing the growth of tubercle bacilli, not only in a test tube, but in the body of an animal. All experiments in tuberculosis are, as everyone who has had experience of them has sufficiently discovered, of very long duration; my researches on this substance, therefore, although they have already occupied me for nearly a year, are not yet completed, and I can only say this much about them, that guinea pigs, which, as is well-known, are extraordinarily susceptible to tuberculosis, if exposed to the influence of this substance, cease to react to the inoculation of tuberculous virus, and that in guinea-pigs suffering from general tuberculosis even to a high degree, the morbid process can be brought completely to a standstill, without the body being in any way injuriously affected.

"From these researches I, in the meantime, do not draw any further conclusions than that the possibility of rendering pathogenic bacteria in the living body harmless without injury to the latter, which has hitherto been justly doubted, has been thereby established.

"Should, however, the hopes based on these researches be fulfilled in the future, and should we succeed, in the case of one bacterial infectious disease, in making ourselves masters of the microscopic, but hitherto victorious, enemy in the human body, then it will soon also be possible, I have no doubt, to obtain the same result in the case of other diseases. This opens up an oft-promised field of work, with problems which are worthy to be the subject of an international competition of the noblest kind. To give even now some encouragement to further

researches in this direction was the sole and only reason why I, departing from my usual custom, have made a communication on a research which is not yet completed.

"Allow me, therefore, to conclude this address with the expression of a wish that the nations may measure their strength on this field of labor and in war against the smallest, but the most deadly, foes of the human race, and that in this struggle for the weal of all mankind one nation may always strive to surpass the other in the successes which it achieves."

ROME AS A PLACE OF MEETING.

No city in the world can offer attractions to visitors to equal those of the Queen City of Europe. To mention the name of Rome is to evoke in the minds of those who are familiar with the historic glories, the artistic treasures, and the monumental grandeur of that city, memories of an ineffaceable delight, to renew which must in itself be an invincible attraction; while to those who are acquainted with the storied beauties and undying loveliness of the palaces, the galleries, and classic remains of the Eternal City, such a visit must be looked forward to with eager anticipation. Rome, too, is now a centre of great scientific and literary activities, the capital of an illustrious nation, and one whose aspirations and repute, not less than its enthusiasm and its sympathies, will not allow it to dream of being backward in the organization for the great reception, such as that of which London, Copenhagen, Washington, and Berlin have in turn afforded models. The invitation was all the more acceptable from being given by Baccelli, a former Minister of State, a President of the Italian Society of Medicine and of the Medical Academy of Rome, an orator, a statesman and a *savant*—one of the most brilliant of speakers, one of the most lovable of men, and one of the most distinguished of modern investigators. Under his invitation, and with the support which he is sure to find from the Government, from the municipality, and from his countrymen, we may be sure that the future Congress of Rome will have attractive features of its own, before which it is not improbable that all Congresses up to this date will pale their ineffectual fires.—*British Medical Journal*.

THE SURGICAL SECTION AT BERLIN.

The London *Lancet* correspondent makes allusion to this Section as follows:

"The material submitted to this Section was perhaps on the whole more remarkable for quantity than for quality; no great or startling innovation in surgery has marked this International Congress. Without doubt the various hospitals in Berlin have undergone great and radical changes in the last ten years. Many of them were shown to the Section, and in all lavish expenditure was more than apparent. The new hospital is quite unsurpassed by any yet built in its arrangement and technical fittings. It is evident that the aseptic, as opposed to antiseptic, method of operating has obtained a firm foothold in Germany."

PRACTICAL NOTES.

ECZEMA OF DENTITION.

For eczema of dentition, treatment is to be directed to three indications (*Gazette Hebdom. in Annals of Gynecology and Pediatrics*, July, 1890).

1. To calm pruritus of the gums, frequent rubbing with the finger dipped in a solution of the following:

- R. Cocaine hydrochlorat., gr. j.
- Potass. Bromid., gr. x.
- Glycerine.
- Aqua destillat., āā f3ss. ℥.

2. For insomnia a dessertspoonful hourly of—

- R. Sodii bromidi, gr. xij.
- Syrup aurant flor., f3ij. ℥.

3. For the local eczema the following:

- R. Zinci oxid., gr. xx.
- Vaselini, 3j.

—*Buffalo Med. and Surg. Journal*.

ANTIPYRIN IN CUTANEOUS AFFECTIONS.

One of the symptoms which is most disagreeable in a large number of skin diseases, is the intense itching or soreness which causes scratching, with consequent injury to the parts involved. Many remedies are now added to the applications usually ordered to allay this troublesome state. Chief among these are carbolic acid, menthol, chloral hydrate, and cocaine, but even these often prove inefficient. According to Blaschko, of Berlin, antipyrin proves a most valuable remedy under such circumstances, and he recommends that for infants the following be given internally:

- R. Antipyrin, ½ drachm.
- Simple syrup, 1 oz. ℥.

Dose, half a teaspoonful at night before going to bed.

Sometimes large doses are needed, but excellent results are to be obtained by this means in eczema, urticaria, strophulus, pemphigus, lichen ruber and planus. Not only does it prove palliative, but often curative, probably by preventing scratching. Antipyrin may also be used for hysterical pruritus with advantage, but in adults must be given in full doses and frequently.—*Medical News*.

HYPNAL IN THE TREATMENT OF NEURALGIC INSOMNIA.

Dr. Fraenkel reports, in *Nouveaux Remèdes*, that he has prescribed hypnal in various cases at his clinic, and that sleep resulted as with chloral, and with the characteristics of the sleep produced by the latter drug—that is, a calm and refreshing sleep, without nausea or disagreeable sensations on awakening—and that the painful symptoms improved as they improve after the administration of antipyrin. Hypnal, or monochloralantipyrin, is a chemically well-defined compound that is less soluble than either chloral or antipyrin; in the

presence of a feeble alkali it is resolved into these substances, and this decomposition occurs in the blood or in the intestine. It has only a slight taste and odor, and is easily administered to children. It produces the hypnotic effect of chloral augmented by the analgesic action of antipyrin, and is especially valuable in insomnia caused by pain. It may be administered in capsules or powders, in doses of 15 grs., to an adult, that may be repeated if necessary. For a child the dose is from 1 gr. to 10 grs.—*N. Y. Medical Journal*.

FRUIT AT MEALS.

As a rule, a fruit dessert in the evening and after a mixed meal ought only to be lightly indulged in, for the average stomach will but rarely tolerate a heavy influx of such cold and usually watery aliment as fruit. This is not the case if the fruit is eaten before or between the meal courses. A ripe melon eaten with salt or butter, before or immediately after the soup, can be freely indulged in. Experience teaches us that stewed or raw fruit may be largely taken between the courses. In many parts of the Continent this custom prevails; the Germans eat stewed fruit with many meats, and in warmer climes such fruit as grapes, plums, figs, melons and sweet lemons are habitually eaten with all kinds of dishes as palate refreshers between the courses.—*Annals of Hygiene*.

ACETANILID IN EPILEPSY.

Dr. Theodore Diller, of Danville, has been using acetanilid in the treatment of epilepsy in nine cases in which bromides and other modes of treatment had previously been employed. He finds that in all the cases in which the drug was given continuously there was noted a reduction in the number of fits ranging from about 25 to 75 per cent., as compared with other months during which the patients were on bromide and tonic treatment alternately. The remedy was in all cases well borne, producing no apparent mental or physical depression, this forming a marked contrast to the depressant effects noted after a course of bromides. No skin eruption was produced. In spite of these results, however, he believes that in any given case, in which a great number of fits are occurring, and where it is desirable to control them as soon as possible, bromides would be of far more value than acetanilid. From the table appended to his paper it would appear that the beneficial effects of acetanilid were most marked only after the drug had been employed for over three months. In two cases no improvement followed the use of acetanilid.—*Lancet*. [Dr. Beaumetz proposed the use of exalgine in epilepsy, and Déferine is now testing the new drug at the Bicetre.]—*N. Y. Med. Abstract*.

SOCIETY PROCEEDINGS.

Tenth International Medical Congress,
Berlin, August, 1890.

DR. H. C. WOOD, of Philadelphia, delivered
before the Congress

AN ADDRESS ON ANÆSTHESIA.¹

He said: The most brilliant modern achievements of the science and art of medicine in the direct saving of life are connected with surgery. These great achievements have been rendered possible by two epoch-making discoveries—antiseptics and anæsthesia. The long array of fatal cases of poisoning by carbolic acid, by iodoform, by corrosive sublimate, and by other antiseptic agents; the hundreds of deaths from chloroform, ether, and other anæsthetics, all bear witness to the verity of that strange law, in obedience to which the progress of the human race is so often at the sacrifice of the individual. Antiseptics has outgrown the dangers of its youth, and to-day the measures that are meant to save very rarely kill. On the other hand, the death roll of anæsthesia is daily added to—added to, according to my belief, at a rate that has not changed in forty years. Though this be true, from far-off Australia comes the news that jury and judge have condemned to heavy penalty a chloroformist who had lost his patient; and in England itself a well-known medical journal lends support to such a verdict by affirming that “deaths from chloroform are preventable, that with due care they may be avoided,” and that, therefore, when they occur they are the result of ignorance and carelessness. If this be true, five hundred deaths and more—the result of ignorance or carelessness! Five hundred surgeons, including such names as Billroth, Jaeger, Simpson, McLeod, Agnew, Hunter McGuire, and others of equal rank, guilty of manslaughter! And still the carnage goes on. Surely, under such circumstances, the subject of anæsthesia is worthy of the attention even of this, the most learned medical gathering of the nations that the world can furnish. Antiseptics, the gift of the Old World to humanity; anæsthesia, the gift of the New World, which made the fruits of antiseptics possible—surely it is fitting that I, standing here to-day before you all as the representative of the newer civilization, should be the chosen mouthpiece for the renewed discussion of this old but pressing theme.

In attempting a fresh study of a well threshed-out subject, I propose to take advantage of the modern physiological methods, and to endeavor to discover by experiments upon the lower animals how anæsthetics kill, and what drugs or measures are most powerful in putting aside their lethal effects. This brings us face to face with

the question. How far is it possible to adapt experiments to the needs of practical medicine, and to reason from the dog to the man? A full discussion of this subject would not be opportune, but it does seem necessary for our purpose to devote a few minutes to the pointing out of certain general guiding principles.

It ought to be acknowledged as a fundamental axiom, that no amount of experiments can overthrow a clinical fact, although when a contradiction between experimental and bedside observation seems to arise, such contradiction challenges the correctness of the alleged clinical and experimental facts alike, and should lead to careful re-examination. No amount of failure to purge a dog by elaterium proves that elaterium does not purge man; whilst, on the other hand, the discovery that digitalis increased the blood pressure in the lower animal very properly led to doubt as to the correctness of the, at that time general, belief that digitalis acts upon man as a cardiac sedative, and finally to the recognition of the falsity of the clinical observation upon which such belief rested.

Whatever difficulties may beset the path of the experimental therapist, it is certain that law is throughout the universe supreme; that man, at least in his physical nature, is only an especially developed animal; and if drugs act differently upon different animals, such action must be in obedience to certain laws, to us known or unknown.

Any attempt to fairly discuss these laws would lead us too far afield for the present. One law, however, treads so closely upon the matter at hand this morning, that it requires statement. This law is, that when an apparatus or system is of similar function, and of similar functional activity in different animals, the difference in the action of remedies is very rarely, if ever, in kind, though it may be in degree. Throughout mammalia the heart has one general structure and one general function; the heart of the dog responds to the touch of digitalis precisely as does the heart of the man. The human brain is so much more highly developed than the brain of the lower mammal that it is, in fact, a new organ or apparatus, and its relation to drugs changes with the change of structure and of function. The scope of this law in regard to anæsthesia is not far to seek. The functions especially compromised in lethal anæsthesia are respiration and circulation. Surely these functions are similar throughout mammalia, and surely we ought to be able to safely reason concerning them from the dog to the man.

Recently, however, alleged clinical facts have been challenged by high authority, upon the strength of experimental results. Under these circumstances, nothing must be at once abandoned, everything must be re-examined. These

¹ British Medical Journal, August 16, 1890.

reëxaminations I have made, and I may be pardoned, perhaps, if I affirm that a complete study of the clinical and experimental evidence brings out, not a discord, but a most beautiful concord—that concord between experimental and practical medicine which so often fails to appear simply because we cannot fit together the fragments of truth in our possession.

Although numerous substances have been tried, there are to-day in use practically only three anæsthetics—nitrous oxide, ether, and chloroform. Of these, nitrous oxide stands apart, because it produces loss of consciousness, not by virtue of any inherent properties, but simply by shutting off from the nerve centres the supply of oxygen.

It has been asserted that the changes of circulation produced by the inhalation of nitrous oxide are essentially different from those of mechanical asphyxia, and that therefore nitrous oxide does not act as an asphyxiant. It must, however, be borne in mind that the phenomena of mechanical asphyxia are largely due to the presence of an excess of carbonic acid in the blood, whilst in the asphyxia produced by nitrous oxide there is no excess of carbonic acid, so that the phenomena present are simply the outcome of a lack of oxygen. It is, therefore, *a priori*, to be expected that the phenomena of mechanical and of nitrous oxide asphyxia should differ to a certain extent. To determine the way in which nitrous oxide inhalation affects the circulation, I have, during the past winter, in connection with my assistant and friend, Dr. David Cerna, made a long series of experiments. The result has been to show that usually the inhalation is followed by a rise of the arterial pressure, accompanied by a great disturbance of the pulse; the pulse at first becoming irregular and tumultuous, but by-and-by settling, so that when anæsthesia is complete the pulse wave is remarkably large and full, and the rate very slow. The rise and fall of the arterial pressure in nitrous oxide anæsthesia was found to vary remarkably, not only in different inhalations, but in different periods of the same inhalation. Sometimes the rise was sudden, sometimes it was slow and gradual; sometimes it was maintained until near death, sometimes it was interrupted very early; sometimes it was not very well marked, sometimes it was enormous.

In all our experiments respiration ceased while the heart was still in full activity. Indeed, instead of the gas acting as a cardiac depressant, it appeared to act as a cardiac stimulant, although it paralyzed the vasomotor apparatus. Thus, during complete anæsthesia, faradization of the sciatic nerve always failed to register itself in an increase of the blood pressure, although the heart was beating very powerfully, and although the pneumogastrics had been previously severed; whilst late in the poisoning—at a time when the respiration had absolutely ceased, and the animal

was in this respect dead, and without the power of self-recovery, and when the arterial pressure also had fallen almost to zero—the pulse waves were frequently still nearly three times the normal.

We made but few experiments as to the action of artificial respiration upon the animal dying from nitrous oxide, but these experiments proved that even after complete paralysis of the respiratory function, artificial respiration is capable of rapidly bringing the animal back to life. The heart lives on through nitrous oxide anæsthesia long after the respiratory function has been abolished, and even when the strong, full pulse fails, and the heart has almost ceased to quiver, recovery is still hopeful, because the loss of function has been caused, not by the presence of a poison, but by the absence of oxygen; and although the paralysis may be complete, the life power sleeps before it dies, and is ready to awake at the touch of fresh oxygen.

These experimental results are in strict accord with clinical observations. The S. S. White Dental Manufacturing Company supply a very large, if not the largest, portion of the apparatus and material used for the administration of nitrous oxide in the United States; and, in answer to my inquiry, Dr. J. W. White, their President, writes me that a computation based upon their own sales, and a knowledge of those of their rivals, has reached "the somewhat appalling result, that anæsthesia by nitrous oxide gas is probably effected in three-quarters of a million cases annually in the United States." Most of these inhalations have been given, not by trained physicians, but by comparatively untrained and often very ignorant dentists; have been given to patients in a sitting or semi-sitting posture; have been given apparently without thought or care to the general community, as the units presented themselves; to the healthy and to the diseased alike; and the result is, out of many millions of inhalations, only three deaths recorded as directly due to nitrous oxide. Could anything be safer?

A suggestive and very practical fact which came out in our experiments is that sometimes during an inhalation of nitrous oxide the rise of the arterial pressure is extraordinary and abrupt. Not long since, in the city of Philadelphia, a gentleman arose from the dentist's chair after an inhalation of nitrous oxide, staggered, and fell in an apoplexy. Is it not easy to perceive that when the arterial system is diseased the great strain of a sudden rise of blood pressure may produce rupture?

Some years since Dr. Kenderdine, a Philadelphia surgeon of local note, died of diabetes, which he insisted was produced in him by the inhalation of nitrous oxide. This is in accord with the researches of the French physician, Dr. Lafont, who reported a case in which sugar appeared in the urine twice in a patient after the inhalation

of the gas, and who also caused in himself, and in dogs, temporary glycosuria by such inhalations. Further, Dr. Lafont noticed in a case of mitral insufficiency temporary albuminuria.

I am not aware that these very suggestive statements of the French physician have given rise to any research, except five experiments made recently upon healthy men, with negative results, by two medical students of the University of Pennsylvania, Messrs. George S. Woodward and Alfred Hand, jun. I do not believe that ordinarily the inhalation of nitrous oxide is followed by sufficient disturbance of the circulation to register itself in the urine, but the negative evidence of Messrs. Woodward and Hand is not sufficient to render it improbable that in exceptional cases the inhalation of nitrous oxide may produce albuminuria or glycosuria. Such phenomena, if they occur, are in all probability not directly produced by the nitrous oxide, but are due to the disturbances of capillary circulation caused by it.

However these facts may be, it seems to me that great caution should be used in the administration of nitrous oxide to persons the coating of whose arteries is diseased, and it is probable that when widespread atheroma exists, ether is a safer anæsthetic than nitrous oxide.

When respiration has been suspended in nitrous oxide anæsthesia, the overwhelming indication is certainly for the employment of artificial respiration.

Notwithstanding the great safety and the many advantages which attend the anæsthetic employment of nitrous oxide, the gas can never be used for the general purposes of the surgeon, on account of the excessive fugaciousness of its influence.

The perfect anæsthetic will be a substance which has the power of paralyzing the sensory nerve trunks without affecting other functions of the body. If such drug exists it yet awaits the coming of its discoverer. Probably until such a sensory-nerve paralyzant is found chloroform and ether will maintain the complete supremacy which they now have; and in the further discussion of my subject I shall confine my remarks to them. Lack of time limits this discussion to:

1. The method in which these two drugs kill, both in man and in the lower animal, that is, whether they destroy life through the circulation or the respiration.

2. The comparative fatality attending the use of these two agents, and the reasons for the difference.

3. The comparative disadvantages between the two agents, and the best method of securing the desired results.

4. The treatment of accidents occurring during ether or chloroform anæsthesia.

In regard to the method in which anæsthetics

kill, my own teaching hitherto has been: First, that although ether in moderate doses acts as a stimulant to the circulation, yet, in overwhelming amount, it is capable of depressing the heart, but that such depression of the heart is always less than the depression of the respiration, and therefore ether kills always through the respiration; secondly, that chloroform may produce death by paralysis of the respiratory centre, or by a simultaneous arrest of respiration and circulation, but that primary paralysis of the heart may occur, and is especially prone to do so when the chloroform vapor has been given in concentrated form.

I think that these views are in accord with general professional belief, but it has recently been alleged that they are at variance with experimental evidences, so that a re-examination is necessary. What, then, are the clinical facts?

If any credence is to be attached to the statements of competent witnesses, who have recorded human deaths during anæsthesia, it is certain that in some cases, under the influence of chloroform, the pulse and respiration have ceased simultaneously; whilst in other instances the respiration has failed before the pulse; and in still other cases the pulse has ceased its beat before the respiratory movements were arrested.

Usually ether arrests respiration in man before it paralyzes the heart, but the collection of records made by Dr. J. C. Reeves certainly show that the fatal result may be produced by syncope. Thus Dr. Ernest H. Jacobs, in a report of a fatal case, asserts positively "the pulse ceased, the breathing continued." It would seem that we must allow that ether in the human subject may cause death in the same methods as does chloroform.

Such then are the clinical facts; or in other words, such are the results of observations made upon the human subject. What are the results of observations made upon animals?

The general teaching in regard to chloroform has been recently challenged by Dr. Lauder Brunton, who, as the result of 450 experiments made by himself upon the pariah dogs of India, has reached the conclusion, as published in the *London Lancet*, that however concentrated the chloroform may be it never causes death from sudden stoppage of the heart. In the physiological laboratories of the University of Pennsylvania, for some years, several hundred dogs have been used annually, and a very large proportion of these dogs have been, at the end of an experiment, killed by chloroform. The observations of Dr. Reichert, Professor of Physiology in the University, Dr. Hobart Hare, Demonstrator of Therapeutics, and myself, have been concordant in showing that chloroform is a cardiac paralyzant, and often does kill dogs by a direct action upon the heart or its contained

ganglia. The statements made concerning the Hyderabad Commission, however, led Dr. Hare and myself to a careful and thorough restudy of the subject. Some of our experiments were made by injecting chloroform into the jugular vein; others by administering it by inhalation in the usual way.

The action of the chloroform seems to be not seriously modified by the method of administration. We definitely proved that in the dog chloroform has a distinct, direct, paralyzing influence on both respiration and circulation; that the respiration may cease before the heart beat, or the two functions be simultaneously abolished; but that in some cases the heart is arrested before respiration. We have several times seen the respiration continue as long as one, and even two minutes after the blood pressure has fallen to zero, and the pulse has completely disappeared from the carotid artery.

The correctness of our experiments, we claim, must be acknowledged. The experiments have not only been witnessed by a number of persons, but I have with me to-day tracings which I will gladly show anyone especially interested in the subject. I do not desire to express any doubt whatever as to the correctness of the experimental data of Dr. Brunton; I simply claim that both sets of experiments, although they have yielded different results, have been correctly and properly performed. It may be that the high heat or other climatic conditions surrounding the pariah dog make his heart less sensitive to the action of chloroform than is the heart of the dog bred in northern climates. That the thought of the different constitutions of animals in different climates is not absurd, is shown by the fact that some years ago—after I had affirmed before the Physiological Section of the International Medical Congress at London, that if certain asserted results were obtained upon European dogs, said dogs must differ from those of America, and had been met with a smile of incredulity—Dr. Brown Séquard rose and stated that he had experimented upon hundreds of dogs on both continents, and that there was a distinct difference between the animals, the vascular system of the European dogs being much more developed, and operations upon them being, therefore, much more bloody than was the case with the American dog.

A very curious parallel might be traced at this point between the experimental and clinical evidence in regard to the effect of climate upon the action of chloroform. In the Southern United States chloroform is used with great freedom, and with great alleged safety; and as long ago as 1878, Dr. Landon B. Edwards, editor of the *Virginia Medical Monthly*, wrote: "It is one of the most peculiar effects I have ever known in medical practice—the difference of

experience in Europe and the North with chloroform and ether as compared with that of the South—the high rate of mortality in the North, and the low rate in the South." Further, in a recent letter to me, Sir Joseph Fayer affirmed the extraordinary safety of chloroform in India, and stated that he knew of no death from it as having occurred in that country, although its use is universal.

In a series of experiments which I have recently made myself to determine the changes in the circulation produced when ether anæsthesia is carried on to death, I have found that in the first periods of anæsthesia the blood pressure is usually elevated, and that it is usually quite high at a time when the respirations are very shallow and imperfect, and the dark color of the blood shows that it is heavily charged with carbonic acid. It is not, however, very rare for the blood-pressure to remain near the normal, and I have seen the blood-pressure begin to fall in the very first stages of ether anæsthesia; moreover, in at least two experiments, death occurred from syncope, the respiration continuing for one or two minutes after the complete cessation of the circulation. In an experiment in which the fall of blood-pressure was most pronounced, and the arrest of the heart most complete, the dog was sick from the mange, and it is possible that the weakened heart was more susceptible than is the normal heart to the depressing influence of ether.

So far, then, as concerns the method in which ether and chloroform kill, I claim most urgently that there is no contradiction between the results as obtained by the bedside and in the physiological laboratories, and that a complete broad study of the clinical and experimental evidence leads to one conclusion, namely, that chloroform and ether are capable of paralyzing the respiration and the circulation; that in some cases one function, in other cases the other function, is primarily arrested; but that ether is less prone to produce a primary arrest of the heart than is chloroform.

In the discussion of the second point which I have raised, namely, as to the comparative fatality attending the use of ether and chloroform, I shall not occupy time with any elaborate setting forth of the clinical evidence. In regard to the number of recorded deaths, I shall content myself with accepting the latest statistics at hand, namely, those collected by Dr. Lawrence Turnbull, who has found 375 deaths reported from chloroform, and 52 from ether. I do not believe that these figures nearly represent the total mortality; I doubt very much whether one-third of the deaths from anæsthesia are reported; certainly not one-third of the cases I have had personal knowledge of having been publicly recorded. Moreover, the pressure to conceal deaths from chloroform, is greater than when the lethal re-

sult is due to ether. The surgeon who uses ether feels that he has employed the safest anæsthetic, and that he will receive no blame if a death occurs from it, and feels also that he has a rare case to put on record, which will give his own name a permanent place in anæsthetic literature; whereas the surgeon who uses chloroform knows that if death occur from the anæsthetic, a very large proportion of the profession, at least in the United States, will condemn him either in public or in secret for the use of this drug, and that he will be fortunate if he escape being publicly condemned by a coroner's jury. Moreover, deaths from chloroform are only too common, so that the surgeon has nothing to gain and much to lose by publication of a chloroform death, and, if possessed of the average human nature, holds his peace.

It seems to me impossible to get at the exact number of anæsthetic deaths, or the proportionate fatality of ether and chloroform. Lyman considers that in regard to chloroform, the ratio of deaths to inhalations is one in 5,860; Richardson affirms that it is 1 in 2,500 to 3,000; Andrews puts it for ether at 1 in 23,204; and Lyman at 1 in 16,542.

Without claiming strict accuracy for any of these figures, I think that it can be asserted that the probable ratio of deaths from chloroform is three to five times that of deaths from ether.

When we come to study the effects of chloroform upon the lower animals, we find that it varies very distinctly in its action on the different species. The cat seems to withstand the fatal influences of chloroform with a power worthy of its reputed "nine lives." Many years ago, Professor Schiff called attention to the fact that the use of chloroform as an anæsthetic in the dog is usually attended with the loss of many animals. Prof. Martin, of the Johns Hopkins University, writes me that the margin between complete chloroform anæsthesia in the dog, and chloroform death, is a very narrow one. This certainly is our experience in the University of Pennsylvania; we have never been able to use chloroform as an anæsthetic without losing a very large proportion of our dogs.

(To be concluded.)

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of July, 1890, compared with the preceding month, the reports indicate that cholera infantum, cholera morbus, cerebro-spinal meningitis, dysentery, whooping-cough, diarrhoea, typho-malarial fever, and inflammation of bowels increased, and that membranous croup, measles, pneumonia and influenza decreased in prevalence.

Compared with the preceding month the temperature was slightly higher, the absolute humidity and the relative humidity were less, the day ozone and the night ozone were less.

Compared with the average for the month of July in the four years 1886-1889, membranous croup, measles and influenza were more prevalent, and small-pox, puerperal fever, typho-malarial fever and typhoid fever were less prevalent in July, 1890.

For the month of July, 1890, compared with the average of corresponding months in the four years 1886-1889, the temperature was lower, the absolute humidity and the relative humidity were less, the day ozone and the night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of July, 1890, at 50 places, scarlet fever at 55 places, typhoid fever at 29 places, and measles at 72 places.

Reports from all sources show diphtheria reported at 8 places less, scarlet fever at 3 places more, typhoid fever at 1 place more, and measles at 36 places less in the month of July, 1890, than in the preceding month.

ANTISEPTIC DUELING.—In a recent duel with small swords, just as the principals were in position, a loud voice exclaimed: "One moment, gentlemen!" At the same instant a surgeon sprang forward with a bottle in his hand. This surgeon was imbued with modern ideas, and taking the swords he dipped their points in a solution of phenic acid, remarking as he handed them to the duelists: "Gentlemen, you may now kill each other without danger of purulent infection!"—*Medical Age.*

ALBUMEN IN URINE.—A solution of one part of acetic acid, and six parts of 1 per cent. solution of corrosive sublimate is prepared; to this the suspected urine is slowly added, which at once produces a distinct cloudiness. This test is not affected by peptones, uric acid, or the phosphates.

LETTERS RECEIVED.

Dr. George W. Webster, Dr. S. B. Collins, Chicago; Dr. E. E. Montgomery, Buffalo, N. Y., Dr. Joseph F. Hobson, Cleveland, O.; Dr. Carrol Dunham, Irvington-Hudson, N. Y.; Dr. B. Chapman, Copley, O.; Dr. D. Y. Winston, Russellville, Ky.; Dr. R. S. Brice, Keota, Ia.; Dr. W. R. Greenlee, Harrison, Miss.; Dr. G. L. Buland, Greenwood, Wis.; Mr. D. R. Craig, Keokuk, Ia.; Dr. J. W. Breedlove, Fort Smith, Ark.; Dr. C. D. Watson, Ontario, Cal.; Henry Bernd & Co., St. Louis; Dr. Hannah T. Croasdale, Dr. Richard H. Harte, Philadelphia; Dr. B. M. Ricketts, Cincinnati; Dr. Carl Koller, Med. Monthly Publishing Co., New York City; Dr. Louis A. Kengla, San Francisco; Dr. Maris Gibson, Wilkesbarre, Pa.; Dr. L. J. King, Visalia, Cal.; Dr. R. C. Ward, Northfield, Mass.; Dr. J. W. Stickler, Spring Lake, N. J.; Dr. H. M. Brown, Hillsboro, O.; J. H. Bates, Dr. W. R. Townsend, Scott & Bowne, R. Terhune, W. P. Cleary, New York City; W. D. Kline, Nashville, Tenn; Dr. Guido Bell, Indianapolis, Ind.; Dr. H. W. Elmer, Bridgeton, N. J.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 30, 1890.

Medical Inspector A. A. Hoehling, in addition to present duties, ordered as President of Medical Examining Board at Philadelphia, convened by Department order June 9, 1890.

Asst. Surgeon R. M. Kennedy, in addition to present duty, ordered as member of the above Board.

P. A. Surgeon F. N. Ogden, in addition to present duty, ordered as member of the above Board.

Surgeon Walter A. McClurg, granted a month's leave of absence from September 1.

Surgeon Edward Kershner, granted a week's leave of absence from September 1, 1890.

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ORIGINAL ARTICLES.

THE IMPORTANCE OF SURGICAL MEANS APPLIED TO THE NASO-PHARYNX IN THE RELIEF OF NASO-PHARYN- GEAL AND MIDDLE-EAR CATARRH.

*Read in the Section of Laryngology and Otology at the Forty-
rst Annual Meeting of the American Medical Association,
Nashville, Tenn., May, 1890.*

BY C. W. RICHARDSON, M.D.,
OF WASHINGTON, D. C.

As a preface to the few remarks I am about to make I wish to offer a few words in explanation ; not in apology. During the early part of the present year, at the invitation of your Secretary, I furnished him with the title of the present paper. Shortly after having written to Dr. Potter I received a copy of the *Journal of the Respiratory Organs*, containing that most excellent paper read by Dr. Daly before the New York Medical Society, carrying out, to some extent, the very idea and train of thought I intended following in presenting this subject for your consideration. I immediately wrote Dr. Potter requesting his permission to change my subject, to which he kindly consented, but, at the same time, urging me to continue its agitation. Concluding that the doctor's advice was well worthy of consideration, I decided to adhere to my original intention, and in a feeble way, lend my aid to the grand piece of "missionary work" already begun by that able exponent of rhinological wisdom, Dr. W. H. Daly.

In the presentation of this subject to-day it is not my intention to array the rhinologist against the otologist ; but simply to insist upon the necessity of the thorough surgical treatment of certain conditions existing within the naso-pharyngeal cavities as an aid to the radical removal of, and in preventing the recurrence of, certain affections of the middle-ear. During the past decade the intimate relationship existing between, or rather dependence of, diseases of the middle-ear upon those of the naso-pharynx has been so thoroughly recognized as to cause a great increase to that class of specialists whose education, from its in-

ciency, has been such as to thoroughly imbue them with these ideas ; whose education in the ear has been as thorough as in that of the nose and pharynx ; whose education has been such as to cause them to view the diseases of the ear, in many cases, to be dependent upon an existing disease of these cavities ; has caused them to search for these causes, to remove them when present, and thus thoroughly to relieve their patients, to this class of practitioners, and as an humble exponent of these ideas, I claim to belong. Dr. Daly in his presentation of the subject has handled the otologist from a rhinological point of view ; and the otologists have accused him, and indirectly the rhinal surgeons, with an incomplete knowledge of diseases of the ear. These exponents having clashed arms it now remains for the auro-rhinologist to attempt to bring these warring factions to terms, bring harmony out of discord, and aid in showing the absolute necessity of the otologist being more of a rhinologist than ophthalmologist. I suggest that we aid in this good work because we are unbiased, we cannot be accused of wanting in knowledge of the use of the tuning fork ; because, while being conservative, we do not hesitate in resorting to operative interference, when demanded ; and, on account of having many ear cases presented primarily, we are better able to judge the relationship existing between diseases of the ear and those of the naso-pharynx.

During my short experience as an auro-rhinologist it has been my lot to have had under observation a number of aural cases that have previously sought relief at the hands of skilled auro-ophthalmologists in this vicinity and neighboring cities. These cases may be divided into two great classes, viz.: acute and chronic inflammation of the middle ear cavity. Among the acute cases were many of recurring middle-ear catarrh, non-suppurative and suppurative middle-ear inflammations. In all the above mentioned acute affections there existed various affections of the nasal and pharyngeal cavities, in many of which, their existence was so patent as hardly to escape the eye of the most non-observing layman. In some cases the aurist, who has been usually an ophthalmologist, while recognizing some disturbance of the normal functions of the naso-pharynx-

geal cavity, failing to appreciate its nature, has applied for its relief unscientific, inadequate, or inappropriate treatment showing an utter disregard, want of knowledge, and frequent dread of the only proper therapeutic measure for the relief of the condition present, naso-pharyngeal surgery. The surgical treatment of these cavities would not have in view only the restoration of them to a normal condition, but also, by the light of our present knowledge, aid in a restoration of the impaired organ of audition, and, acting as a prophylactic agent, by removing the cause, prevent the recurrence of subsequent attacks. In many of the acute affections of the ear, in which there had been numerous recurrences, in the hands of otologists, I have almost universally found some affection of the naso-pharyngeal cavity the relief of which, by operative measures, not only aided in affecting a rapid recovery, but also produced an absolute immunity from subsequent attacks. These facts are so thoroughly acknowledged by all auro-rhinologists as to have become an aphorism—to cause me almost to apologize for having given it mention, but having done so I shall cite several cases to illustrate this point.

About two years ago I had placed under my care, by an otologist of Washington, a young woman who had frequent recurring attacks of middle-ear catarrh. One attack would hardly be relieved before another would supervene. For years she had been under medical care for this annoying deafness, but invariably found that though exerting all due care she was certain to find her efforts futile. My friend sent her to me that I might treat her throat, at the same time advising me to continue attention to the ears. He was the first medical attendant who had ever suggested the care to nose and pharynx. The pharynx was, with its thick padding of mucus, the most disgusting sight I have ever seen; the tonsils were enormously hypertrophied; the vault studded with stalactite-like hypertrophies; and the anterior and post-nasal orifices blocked by hypertrophies of inferior turbinates. The whole picture was changed within a few days by intranasal and pharyngeal surgery. While patient was recovering from effects of active surgical procedures several inflations were made, and she was discharged, within a short period, with no catarrh of nose, pharynx or ear, and so remains at present writing.

Some time ago a patient was presented to me for examination. She had been under the care of various auro ophthalmologists for several years for a chronic suppuration of the right middle-ear, but not having obtained relief her parents had desisted in treatment. I found considerable glandular hypertrophy at vault of pharynx, and suggested the removal of the same as a possible means of aiding in the relief of the suppuration of the ear; as the child was about to leave town

they did not consent to immediate treatment. Within six months an acute suppurative inflammation having occurred in the left ear patient was placed under my care. Removal of glandular hypertrophies at vault, with mild but effective treatment to ears, was followed within a few days with cessation of suppuration in the old, and within a couple of weeks in the recently affected one. I have seen this patient lately; hearing normal and no suppuration.

Several cases of chronic middle-ear catarrh have been under observation that have received the most decided negative prognosis from distinguished auro-ophthalmologists; in these I have found naso-pharyngeal disease of an obstructive character, the removal of which, with simultaneous and subsequent use of inflation, has been attended with the most satisfactory results. Acute inflammation of the middle-ear I seldom see without finding some obstructive disease of the nasal cavity or glandular hypertrophy at the vault of the pharynx. The simple treatment of the ear affection without any attempt to remove the producing cause, as is the course adopted by the majority of aurists, leaves the case half treated; it leaves the patient, to say the least, open to a recurrence at any moment. It would be unnecessary to give a long citation of individual cases drifting into our hands, who would show the insufficiency of simple otological treatment. In speaking as I do, I do so only with regard to the locality in which I live and its environs. In Washington and Baltimore the auro-ophthalmologist does not seem to recognize the great importance of naso-pharyngeal diseases as productive of affections of the ears. If they do, their actions belie their opinions, and one must acknowledge that they are rhinal therapeutic nihilists.

Obstructive disease in the naso-pharynx, hypertrophies, polypi, spurs, deflected septi, and hypertrophial glandular tissue at vault of pharynx, are the conditions usually observed by me as demanding treatment in most of the cases coming under my observation. The *modus operandi* in the production of disease of the middle-ear through obstructive disease of the naso-pharynx, whether by interfering with the ventilation of the middle-ear, by extension of catarrhal inflammation, by inflammatory infiltration into or paralysis of tubal muscles, are questions of minor importance as compared to the great truth, now universally acknowledged, that these conditions are productive of the affections mentioned, and that the only consistent, scientific, rational, and, therefore, proper treatment, consists in the primary removal of the causative agent as essential to the secondary treatment of disease thereby produced. Even should the above assertion be challenged in general, or as regards any individual case, one cannot but admit that many of these cases, in the hands of the aurist and auro-ophthalmologist are

allowed to continue suffering more or less inconvenience from unpleasant naso-pharyngeal affections which the auro-rhinologist would at once recognize, and, simultaneously with the aural affection, relieve. I cannot agree with the statement I have several times noted, made by a distinguished New York specialist, that atrophic rather than hypertrophic nasal catarrh is productive of the major proportion of middle-ear affections. Atrophic nasal catarrh, in which the nasal passages are extremely patulous, has presented the smallest per cent. of middle-ear affections in my practice.

In showing how inadequate the ordinary treatment of ear affections under the care of the auro-ophthalmologist is, I do not wish it to be understood that I am, to any extent, an aural nihilist. I am afraid a great many of my medical *confères* are claiming too much for the independent use of the forceps, cautery, snare, drills and saw. I doubt very much of their curing all the ills to which the ear is subject unless they at the same time resort to a judicious use of aural therapeutic measures. Firmly convinced as I am of the value of naso-pharyngeal surgical methods, I have not yet thrown away the leech, douche, paracentesis knife, Politzer bag or catheter; our only safeguard is the judicious use of these means and the acknowledgment of their just therapeutic value. On the other hand, we must acknowledge the increased successfulness, or aid to success, in otological work rendered by the rhinal surgeon; but while acknowledging these achievements one must remember that there are a vast number of aural cases falling under our observation thoroughly independent of any change within the naso-pharyngeal cavity; the affection in the one being synchronous with but independent of the affection in the other; the relief of the one not arresting the retrogressive progress of the other. It is almost unnecessary for me to state that I refer to sclerotic changes within the tympanic cavity. These cases are usually present in persons manifesting little or no change in naso-pharyngeal cavity, with patulous tubes. What aid can the rhinologist here furnish? If the patient is to have relief it must be through aural therapeutic measures employed in the hand of the skilled otologist. It is nonsense for one to agitate ideas having in view the condemnation of otological therapeutic methods—they have a vast field of usefulness. The otological surgeon existed and filled a field of usefulness before the rhinal surgeon was born. It is not a question of the younger, but more thriving member devouring as it were the one which it claims to have so sorely afflicted, but rather a question of the more thorough amalgamation of the two branches; a more thorough appreciation of the dependence of aural affections upon naso-pharyngeal disease; a more thorough application of rhinal therapeutic

methods in the treatment of aural affections by the aural surgeon, the aurist becoming more of a rhinologist and the rhinologist more of an aurist; a more thorough inculcation of these views in the aural and rhinal clinics of this country and elsewhere. Contrary to expressed views, one does not find either in aural clinics that careful examination and treatment of the naso-pharyngeal cavity as is carried out in rhinal clinics, nor in rhinal clinics that same care and attention to the ears that one finds in aural clinics; and appreciation of the inadequacy of the routine treatment of the case as resorted to by the auro-ophthalmologist.

Independent of the direct relationship and import of naso-pharyngeal surgery as applied for the relief of affections of the middle-ear, it also has an important direct action when applied for the relief of naso-pharyngeal catarrh. Coming before a body of experts in naso-pharyngeal diseases, it would seem almost unnecessary for me to refer to the important rôle that glandular hypertrophy and bursitis play in the production and continuance of naso-pharyngeal discharges. It would seem unnecessary, I say, to call attention to these important facts were they universally acknowledged and duly regarded. Most authorities agree and acknowledge that glandular hypertrophy at vault of pharynx when existing in sufficient quantity to cause more or less interference with nasal respiration should be removed, but there is a want of unanimity when this tissue exists only in small quantity. There may be doubt in the minds of many as regards the advisability of the thorough removal of all glandular tissue at vault, possibly thinking that its existence there implies that it must perform some physiological function. In the normal condition, as shown by numerous examinations upon the living and dead, there exist no such excess of glandular tissue. I have been able in a number of cases to demonstrate the important rôle, slight glandular hypertrophy, and projecting knobs of adenoid tissue, play in the production and in the continuation of naso-pharyngeal catarrh. There exists also another condition at the vault in which there is, what might be called, an hypertrophical condition of the mucous membrane. The mucous surface, as noted at the choanæ, appears to be thrown into folds, and projects slightly beyond what appears to be normal; it is deeply injected, being well demarkated from the contiguous mucous surface. In other words, having very much the appearance of granulation tissue as seen in the oral portion of pharynx. The lateral chains of lymphatic tissue occasioned add an element. Bursitis may or may not be acknowledged. There exists a condition at vault that bears all semblance to this condition, and the influence it has in the production of excessive post-nasal secretion cannot be overlooked or

underestimated. While insisting upon the important bearing the conditions just mentioned have in the production of excessive post-nasal secretions and their removal by surgical procedure, in the cessation of the same, I do not wish it to be understood that I offer them as the sole factors, or for an instant overlook other important elements in the production of this affection. What I wish to emphasize is the frequent dependence of post-nasal secretion upon local pathological changes such as those just mentioned, the removal of which will be attended with beneficial results. I do not insist upon any special surgical procedure; the forceps may be used with advantage in one case, the cautery in another.

In closing I must thank you for your kind attention, and apologize for the rambling nature of my remarks and want of strict adherence to the text as given.

ON THE DETERMINATION OF ASTIGMATISM WITH THE OPHTHALMOMETER (JAVAL-SCHIÖTZ).

Read in the Section of Ophthalmology, at the Fort-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY CARL KOLLER, M.D.,
OF NEW YORK.

It is almost a century since the great English philosopher, Thomas Young, discovered in his own eye an error of refraction due to different refraction of different meridians. For half a century the knowledge thus obtained did not influence the practice of prescribing glasses. It was almost exclusively astronomers, scientists and physiologists, like Young, Airy, Stokes, Fick and others who studied this asymetry of refraction in their own eyes, measured it and tried to correct it. The first to have used cylindric glasses to this end was Airy. A new impetus was given to the study of this imperfection of the human eye by the invention of Helmholtz's ophthalmometer. With the aid of this perfect instrument, invented to determine the curvature of different surfaces, Helmholtz, Donders and their pupils, as Knapp, Woinow, Middelburgh, Mauthner, etc., studied in all directions the dioptric system of the eye. Fundamental points were settled, as for instance that the refraction had nothing to do with the curvature of the cornea; that the curvature of the cornea is not changed by accommodation; that astigmatism is almost exclusively due to the form of the outer surface of the cornea, that all eyes, with a very few exceptions, have a certain degree of astigmatism; that the meridian of stronger refraction in the great majority of cases is the vertical one, and a great number of minor points. However, the ophthalmometer remained an instrument fit only to be used in a few laboratories by the hands of a few investigators. Practice

had to content itself with circumstantial and little exact devices of subjective tests, the great number of which is the best proof of how very unsatisfactory they are.

To the energy and perseverance of Javal, who made the study of astigmatism a task of his life, and who by this has established a claim upon the gratitude of mankind, we are indebted for an instrument, at the same time accurate and so perfectly fit for practical purposes, that it hardly allows any improvement. One cannot say that the instrument, for the time it has been made known to the profession—about ten years—is so generally known as it deserves. When it first came into my hands, about five years ago, I was assistant then at the eye hospital in Utrecht, under the management of Donders and Snellen. A very few exemplars were to be found at the European clinics, and when by the daily use of it I became convinced that it was superior to any other method of finding and determining astigmatism, it was my wonder why the profession did not avail itself of this superior means. When two years ago I came to this country, which is so very ready to adopt new and good methods, I found the ophthalmometer comparatively unknown. Only a few men had it in constant use, and contributed to its becoming known. These circumstances might excuse me when I bring before you an instrument which ten years ago was already perfect in its chief traits, although the new model represents some improvements on the old one. If I succeed in showing you the great advantages this way of determining astigmatism has over all the others, and so contribute to the spread of a valuable invention, I shall feel satisfied with the trouble I have taken.

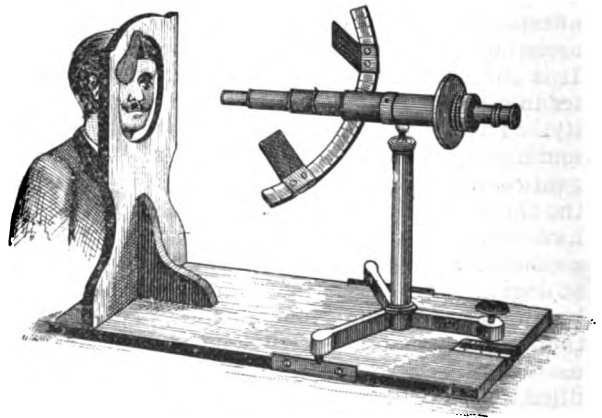


Figure represents the old model of the instrument. In the new model a large disc containing the radiating lines and figures for designation of axis covers so much of the instrument as to render the drawing unintelligible.

The ophthalmometer of Javal-Schiötz has the object to determine the curvature of the cornea, and the instrument is arranged in such a way that the differences of curvature in the different

meridians of the cornea accurately and quickly can be detected. It is generally admitted nowadays that astigmatism, in the vast majority of cases, depends chiefly or wholly upon the asymmetry in curvature of the cornea. I shall deal later with this question, and for the present will assume the correctness of the statement.

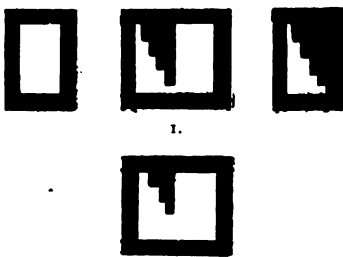
The curvature of surfaces is most easily determined by the measurement of katoptric images; therefore, the instrument has to consist of an image-issuing object and an image-measuring part. Since the curvature shall be determined in different meridians, and in fact differences of curvature shall be measured, both parts must be revolving around a fixed axis. The image-measuring part is represented by a telescope, to which an arc immovable is fastened; the ray of this arc is 300 mm. and the center of its curvature is the eye to be observed. Two targets, one of each attached to one arm of the arc represent the image-issuing object. The size of an image reflected by a convex mirror—and the cornea acts here as a mirror—depends on three things: The size of the object, its distance from the mirror, and the radius of curvature of the mirror. Three of these things known you can calculate the fourth very readily. To determine the radius of the cornea you can put an object of a known size in a certain distance, measure the size of the image reflected and calculate the radius. But you can also follow another way: You can vary the size of an object standing at a definite distance until the mirror of unknown curvature reflects an image of definite size. If you now measure what the size of the object was required for that, you can easily calculate the ray of curvature. This way was adopted by Javal and Schiötz with their instrument.

The two targets attached to the arc are movable and so represent the out ends of an object to be varied in size by moving from or towards each other. In order that this supposed object might keep within the definite distance of 300 mm. from the cornea, the telescope with which the image is observed has an invariable focal distance, so chosen that when the images are seen through it the arc with targets is in a distance of 300 mm. from the cornea. Still the image is to have a certain size. This is attained by a double refrigent prism of Iceland spar placed in the telescope. The prism is cut in such a way that on its place within the telescope it has a doubling power of 3 mm. To explain this latter: If you look at one point through the telescope and the prism hidden in it you will see double images of this point—just distant 3 mm. from each other; and if you look at an object of 3 mm. size you will see double images of this object, one end of one image touching the other end of the other image. That gives you a means at hand to measure the size of smaller objects, in our case,

of the katoptric image reflected from the cornea. When the image has just the size of 3 mm., the double images which the telescope gives you will touch each other with their outer ends; when the image is larger the ends will overlap each other, and when it is smaller than 3 mm. the ends of the double images will be as distant from one another as the image is smaller. All we have to do to measure the curvature of the cornea is: to place the eye in question on the right place in resting the chin of the person on the head piece, then to direct the telescope upon it by means of a screw and lateral motion and so look at the reflected images of the two targets. As already mentioned the two targets represent the out ends of an imaginary object which can be varied in size by moving the targets. The doubling action of the prism shows us four images of the two targets, two of each one; we observe only the two medium ones representing different ends of the same object and neglect the two outer ones. If the two middle images are just in contact, we know that the image of the imaginary object reflected by the cornea has the accurate size of 3 mm. In case they are distant or overlapping we have to adjust the targets in order to attain the required position. In measuring our object and making a simple calculation we will find the radius of the cornea. But this trouble can be spared, as a division of the arc gives us directly the corneal radius for the corresponding size of object. If the images by adjusting the targets are brought to contact, and remain so, as the arc is revolved about the axis, it may be concluded that the curvature of the cornea is the same in all its meridians and no astigmatism is present. Measuring the curvature in a number of meridians calculation would give us the amount of astigmatism, if any, present, and its chief axis. But owing to a particularity of astigmatic surfaces we can dispense with such a circumstantial measuring and figuring. The dioptrical and katoptrical images of cylindrical lenses and mirrors are displaced in a certain way, and the same holds good for all astigmatic surfaces that can be considered as a sphero-cylindrical combination. The image of a straight line is parallel to the object line only in the case that the direction of the line is coincident with one of the chief axis;—in every other case it is turned to a certain angle.

In my treatise about cylindrical lenses, "Graefes Arch.," 1887, I have given the theory of this fact in order to explain some very interesting phenomena based upon it. This very particularity of astigmatic surfaces enables us to find the axis of astigmatism by one turning of our instrument. Our image-issuing object extends chiefly in one direction, it is parallel with the arc and coincident with the doubling plain of the crystal within the telescope. Suppose the arc with its targets stands by chance just in the

meridian of strongest or weakest refraction; the katoptric images will be situated in the same plane where also the doubling action of the prism takes place. Therefore, the double images will stand in the same level, and we know we have found the meridian of one of the chief axis of astigmatism. But now suppose the arc does not stand in the meridian of one of the chief axis, the reflected image will not be parallel to its subject but turned in a certain degree. The doubling action of the crystal nevertheless takes place in the plane of the arc, and as a consequence thereof the double images will not stand in the same level. By a simple turning of the arc we can bring them to the same level and so find the chief axis. A large disk with radiating lines and figures for the meridians is fastened to the telescope. On its reflected image in the cornea we can read the position of the axis so found. In turning the arc and telescope by 90° we bring the instrument in the other chief axis in order to find the exact amount of astigmatism. It might be said in parenthesis that in this way we ascertain that there are cases of astigmatic curvature of the cornea—although they are very rare, which do not directly follow mathematical rules, as the chief meridians are not rectangular to each other but include smaller angles (until 70°)—contrary to the rule known as Sturm's law, which says that in three-axis ellipsoids the meridians at maximal and minimal curvature include an angle of 90° .



Double images of targets. 1, in contact. 2, overlapping.

The diagram of the targets is so chosen that from the amount of overlapping of images the amount of astigmatism in dioptics can be read without any further calculation;—for a certain increase in the size of the images corresponds to a certain increase in the size of the radius, that is, a certain amount of astigmatism. Strictly does this hold good only with eyes of one size, and eyes can be of very different size, notwithstanding they have the same refraction. Think, for instance, of a mouse's and an elephant's eye, both emetropic—an example which Javal himself at another occasion has used. For small eyes the part of the image corresponding to one dioptre ought to be smaller, for big eyes larger. But since we have to deal almost exclusively with eyes of the corneal radius 7.8 or 8 mm. the

arrangement as it is, is accurate enough and very expedient for practical purposes. Having found amount and direction of astigmatism, we have to verify this result by the glass test. The test with glasses is necessary and cannot be superseded by any other test, just as the determination with the ophthalmoscope can facilitate and abbreviate the glass test but cannot do away with it. The gain is enormous anyhow.

Beginning the examination of a patient as to his refraction there are a number of things which we do not know. We do not know if there is astigmatism; in case there is what its amount is, how the axis stand and which the refraction is. This concurrence of unknown makes the examination of refraction so difficult and often so tedious. The ophthalmoscope, with which every examination should begin, gives us a number of points, but still there remains sufficient uncertainty to make us feel often that we are at the mercy of the patient's intelligence. With the ophthalmometer of Javal-Schiötz we can settle some of those questions before we enter in the subjective test. We can find out if there is astigmatism or not; we can find its chief axis with exactness; we can find its amount with sufficient accuracy. And all that we do with a rapidity that is not approached by any other method. I have still to speak of the question already mentioned in beginning, if the assumption is just that astigmatism is solely or chiefly due to the cornea, and, therefore, measuring the astigmatism of the cornea will give us the astigmatism of the whole eye. In the first papers about astigmatism there was much spoken about the astigmatism of the lens and its relation to the whole astigmatism. Careful study through a number of years, examination of several thousand eyes with the aid of Javal's ophthalmometer, comparative researches with Helmholtz's ophthalmometer have resulted for me the following belief, which is also the opinion of most of the men who have directed their attention to this point:

1. Static astigmatism of the lens, that is astigmatism produced by the lens in its condition of rest is a comparatively very rare thing; very likely oblique position of the lens relative to the axis of vision is the cause. It is a remarkable occurrence that this condition was present in the eye of Thomas Young, the discoverer of the so-called regular astigmatism.

2. In the eyes of young people up to 35 years of age there is dynamic astigmatism of the lens present; that is astigmatism based upon involuntary irregular contractions of the ciliary muscle. This dynamic astigmatism of the lens is opposite to the astigmatism of the cornea so as to lessen its amount in a certain various degree. It does not change the axis of astigmatism, so that the axis of astigmatism of the whole eye is invariably coincident with that found in the cor-

nea. For older people with little or no accommodation, also in such young ones who have used correcting cylindric glasses for a certain time, we find very little or no difference between astigmatism of the whole eye and astigmatism of the cornea; in these eyes the asymmetric spasm of the ciliary muscle has subsided. Similar to the spasm of accommodation in hypermetropes subsiding either by age or by constant use of correcting glasses.

3. I have found only a few single cases amongst a great number of eyes where the axis of the total astigmatism were not coincident with the axis of corneal astigmatism. This is due very likely either to oblique position of the lens or irregular swelling of the lens in beginning cataract.

I have to add a few words about the comparative merits of three objective tests for estimating astigmatism—retinoscopy, ophthalmoscope, ophthalmometer—letting aside all the subjective ones, which if not supported and preceded by one of the objective tests take up much of your time and do not give you the feeling of surety absolutely necessary in dioptric work.

Retinoscopy might be said to be the only really accurate objective method to estimate total astigmatism of the eye together with the refraction. However, it takes much time, and for detection of low degrees of optic errors considerable practice is necessary. The chief objection to me is the circumstantial proceeding of the test and the necessity of dilating the pupils with atropia or homatropia if an accurate result shall be obtained.

As to the ophthalmoscope it has its enthusiasts, who believe themselves able to determine astigmatism with the aid of this instrument. I admit that we can detect astigmatism with the ophthalmoscope, tell if the vertical or the horizontal meridian is the stronger refracting, and how much about the amount of the astigmatism might be. We cannot find the chief axis accurately; in some cases we cannot find the amount of astigmatism with sufficient accuracy. That refers to every observer, however skilful he might be in the use of the ophthalmoscope—and that because it does not depend on the skill but on the chance of circumstances. If vessels happen to run in the chief axis, one can determine the astigmatism. If they do not happen to run there, accurate determination of astigmatism with this method is not feasible.

The ophthalmometer does not require any dilatation of pupils and is not dependent on the chance of circumstances. In less than one minute you can tell with perfect accuracy if there is astigmatism in an eye, you know exactly within 5° how the axis is situated, you know very approximately the amount of astigmatism. You have nothing to do than to place the cylindric glass—

it does not matter if positive or negative—in front of the patient's eye, and having so corrected the astigmatism you will find it easy to find the refraction.

Javal's ophthalmometer furnishes the greatest accuracy in combination with greatest rapidity of work, and, therefore, it is the instrument of the future.

ANTIRABIC INOCULATIONS.

SENSATIONS EXPERIENCED BY INOCULATED PERSONS. HOW IMMUNITY IS ATTAINED.

Read by Title in the Section of Practice of Medicine, Materia Medica and Physiology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY PAUL GIBIER, M.D.,

DIRECTOR OF THE PASTEUR INSTITUTE OF NEW YORK.

More than ten thousand people have been inoculated during the five years in which the Pasteurian inoculations have been practiced. Among the number were a few doctors; nevertheless, there does not, as far as my knowledge goes, exist any detailed narrative of the phenomena noticed in those who have submitted to the preventive treatment for rabies after having been bitten. I have therefore thought that it would prove interesting for the study of immunity in general, and as a contribution to the history of this system of treatment in particular, to make known some of my observations.

Following in the steps of several doctors, either directors or assistants in antirabic institutions, who did so to guard against a possible accidental inoculation during their daily manipulations of virulent matter, I inoculated myself as well as two of my assistants, Messrs. Roger and De Monchy. A young lad attached to the laboratory was likewise inoculated. But I must here and at once make the following remark, that whereas the lad complained only of local sensibility, of fatigue, and of a little nocturnal agitation, we, who are more accustomed to observations, made several which I think are worthy of record.

The series of inoculations which I practiced on myself and on my two aids, began March 27, 1890, with marrow of the fourteenth day, and ended on the 10th of April following, with matter of the second day.

The subcutaneous injections of the first four days were followed by a slight irritation, which, in one of us, extended so far as to redness of the tegumentum *in loco*, but without induration. During the night, sleep was somewhat disturbed by the sensitiveness of the lateral part of the lumbar regions, viz.: at the spot of the inoculations. During the first ten days, the symptoms were about the same. The temperature of the body rose slightly, but it cannot be said whether this slight febrile motion was caused through and by the injected matter, or whether it was the result of the

slight inflammation caused by the injection itself. These symptoms were considerably modified by hot baths of lengthy duration. Towards the tenth day, the tissues seem to have accustomed themselves to the injected liquid; the reaction was less acute, the pain decreased, and three days after the last injection there remained, so to speak, hardly any local traces of the fifteen injections made on each side.

Thus far, I have not said anything to explain the working of the immunity, but I will now take up the subject. How, then, is immunity obtained?

In a book I published last year ("Analyse des Choses," Dentu, éditeur, Paris) I propounded a theory which, according to my belief, may be of use to explain the hitherto mysterious property, common alike to man and to animals, of resisting the inroads of certain diseases when once attacked by them. In the living body, what is there that resists the development of the infectious figured elements which have reached the body from the outside? Evidently it is the figured elements which make up that body—in other terms, it is the living cell. For me, immunity is a phenomenon of cellular memory. The cellulæ are small individual beings, endowed proportionately with the constituting principles of the living being, such as we know it. As such, they enjoy the faculty of memory, and each time that they are attacked by a malady, they remember—automatically, if you like—but still they remember how they have gotten rid of the intruder (I mean the microbe) which attacked them, and when next assailed, they know immediately what measures are necessary to prevent the enemy from retaining a hold on them.

I do not desire to dwell any further on this theory. It is sufficient for my purpose to have indicated it; I will only remark that the recent works of Metchnikoff on the part played by the white globules in the case of inflammation produced by bacteria, certainly go to strengthen that theory. I will now try to show, by means of the three cases that I am about to analyze, that rabies, which is a malady affecting principally the nervous centres, is no exception to this rule.

In order that the nervous centres be protected against a mortal attack of rabies, it is necessary that, in order to forestall the progress of the microbe, other microbes of the same species, but attenuated, should be placed in contact with the cells of the spinal cord and of the brain. Let me make the passing remark, that the first subcutaneous injections are made with matter the prolonged dessication of which has caused its virulence to disappear, but it is not unreasonable to admit that the nervous cell must be influenced, in a measure, by the ptomaines secreted by the hydrophobic microbe, and that this reasonably gives it a certain degree of power to resist (through being accustomed to its secretions) the attack of

microbes at first weak, then more and more virulent, when introduced by the successive inoculations. When, after having followed (as shown by experience) the nervous fibres which from the bitten spot go to the cord and to the brain, the infectious germ reaches the nervous cells of the cerebro-spinal axis, it finds them prepared, hardened against its attack, and it can do them no injury. Such is immunity.

What goes to demonstrate that during antirabic inoculation things take place as I have just described, is that my two assistants and myself experienced, during and after the inoculations, a series of phenomena indicating that certain departments of the nervous system were stimulated into activity by some unusual excitement. For my part, during the days when I took the last inoculation, and a few days after, I observed a greater activity of the salivary glands; several times a day I felt saliva welling from the submaxillary glands, and from the parotid canal, my mouth filled with saliva and I was obliged to eject it. During the night I was obliged to urinate, which is not my usual custom. These symptoms were the same in the case of my assistants, which evidently shows a sign of excitation of the medulla oblongata. I recall that in 1884, in a pamphlet on hydrophobia ("Recherches sur la rage et sur son traitement," Allatin and Houzeau, publishers, Paris), I have shown that *polyuria* was a frequent symptom of rabbits inoculated with the virus of hydrophobia, at the moment their nervous system was invaded by the germs. During the last week of the treatment, and the week following, I felt a certain heaviness of the head and an inability to work. These symptoms were equally experienced by MM. Roger and De Monchy, with these additional ones: On the fifth day (inoculated with the marrow of the sixth day), M. Roger complained of a sudden pain in the right side, lasting about half an hour. On the eighth day (inoculated with the matter of the fourth day), he experienced dizziness, which lasted intermittently for fifteen days. The twelfth day, he felt pain in the lumbar region, extending as far as the right testicle. On the fourteenth day the vertigo continued, accompanied by buzzing in the ears, which rendered walking difficult. But since this treatment, M. Roger assures me that he has been relieved of a chronic dyspepsia accompanied by pyrosis. The alvine functions are also more regular. M. De Monchy was more affected by nervous troubles. From the second injection, he felt pain in the nape of the neck; on the fifth day these pains spread into the brachial plexuses. After the ninth inoculation, some fulgurating pains were experienced in the region of the left crural nerve. On the twelfth day, he suffered a frontal cephalalgia and an exacerbation of the pains at the nape of the neck. These symptoms continued for about fifteen days after the

treatment, accompanied by unusual sexual excitement, sadness, undefined preoccupation, and unlocalized pains. The appetite was always good. Finally, MM. Roger and De Monchy were affected, on or about the fifteenth day following the last inoculations, by pains in the spots where the injections were made. These pains were so acute as to suddenly awaken them in the middle of the night. I call attention to this last fact, because in one case, where a person inoculated died of hydrophobia, in spite of the treatment, the adversaries of the Pasteur method took advantage of this fact—that the patient had complained of suffering at the spot of the inoculation—to pretend that hydrophobia had been communicated to him by these inoculations. One sees, however, that these injections are able to cause acute pain some time after they have been made, without determining hydrophobia.

To-day, May 19, nearly a month and a half after the last inoculation, we are, all three, in a state of health as satisfactory as possible. I will add that the sixteen persons who have been inoculated at the New York Pasteur Institute in the two months following its opening, are enjoying good health, whilst several domestic animals bitten by the same dogs that attacked several of these patients, have died of hydrophobia. A man bitten by one of these dogs, and not treated at the Institute, has also died of hydrophobia.

I am happy to make known these facts, and I shall be still happier if, by the application of the method of my illustrious teacher, M. Pasteur—the method which is so successful in Europe—I am able on this side of the Atlantic to preserve the greatest number of persons possible from the frightful death which is the consequence of hydrophobia.

A PECULIAR CASE OF ADDISON'S DISEASE.

Read in the Section of Dermatology and Syphiligraphy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY A. H. OHMANN-DUMESNIL,

PROFESSOR OF DERMATOLOGY IN THE ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.

Despite the fact that the literature of Addison's disease is vast and that much has been written upon this peculiar affection, its clinical characteristics and its pathology, each new case which is reported has a certain interest attaching to it which is certain to attract more or less attention. I do not purpose writing an exhaustive paper upon the subject, but merely wish to place upon record a case which proved interesting to me from the fact that a certain symptom presented itself which I have not found recorded in connection with this affection. I wish to state, however, that my search has been by no means exhaustive, and that similar cases might have escap-

ed me in my rather rapid review of a portion of the literature of the subject. This symptom to which I will call attention later on in a more explicit manner is one which I deem of some importance, as it confirms the view that Addison's disease is primarily and essentially an affection of the sympathetic nervous system. If we can positively determine this to be a fact there may be found some means of arresting the disease even if the pigmentation can not be caused to disappear. As the trouble is one which almost invariably terminates fatally, such an advance in the curative management would be a triumph in therapeutics.

That not more is known of Addison's disease is probably due to the fact that it is an affection not often observed. I have had an opportunity of observing but two cases, in one of which the history was such as we ordinarily find it, whereas in the other a few points existed which added interest and which have led me to present a short history and clinical record which is as follows:

Case 1.—On February 6 of this year I was requested by Dr. W. W. Graves, of this city, to see a case of Addison's disease. The patient was a man of forty-six who gave the following history: While employed in a grain elevator in Memphis, Tenn., he became aware of a general feeling of malaise. This "bad feeling" as he expressed it became so great, that as soon as he felt able to do so, he left for St. Louis. The beginning of this attack was about October 15, 1889. The bronzing of the skin was hardly noticed at this time but it progressed steadily. He arrived in St. Louis about December 20, and a week later it was noticed that he perspired very freely over the whole body and that the sweat had a most intense and disgusting odor. So marked was this that the doors and windows had to be opened. The whole house was permeated by this smell, which resembled that of carrion. The bromidrosis gradually disappeared and the amount of sweat diminished. Family history good.

At the time I examined the man I found him well developed—perhaps slightly emaciated, but not perceptibly so. Expression of face dull. He was still feeling rather weak although he had improved somewhat of late. He complained of a pain in the pit of the stomach, but pressure exercised in this region did not elicit any pain. He occasionally "bloated," and the tympanitis would become so great as to distress him much. He would be unable to put on his clothing, and he stated that it came on suddenly. Pressure in the back over the areas of the kidneys and suprarenal capsules did not elicit any pain. The patient was of a nervous disposition and had always been so.

Inspection showed that the man had a good supply of hair of a dark-brown color—almost black. He stated, however, and was corrobor-

ated in this by his sister, that before his present illness his hair was of a light color—that he was a blonde. The skin of this individual was apparently of normal thickness, no more than the usual moisture being perceptible. In fact it appeared perfectly normal with the exception of one thing—the color. The whites of the eyes and the mucous membrane of the mouth were devoid of any adventitious pigmentation.

The entire integument with the exception of that covering the head and the hands was of a marked brownish-bronze tint. The chest seemed to be of a somewhat slightly darker hue than the back. Disseminated throughout the affected area darker macules of various sizes could be observed. The areolæ about the nipples, the axillæ, perineum and internatal field was also darker than the general surface. On the other hand, that portion of skin lying over the scapulæ was lighter in color. A few small scars existed upon the chest and these were whitish. On the chest and back there existed numerous white macules of the size and shape of small oats. These were numerous, more particularly upon the chest and upon the forearms. The patient stated that these were small scars from wounds made by the grain which scratched him while at work in the bins of the elevator. While this appeared to be a very plausible explanation to account for the presence of these spots, close inspection failed to furnish any satisfactory evidence of their being scars; and, as excision of a portion of the integument was not permitted a resort to microscopical examination could not be made in order to obtain confirmatory evidence.

That Addison's disease is due to some disturbance of the sympathetic nervous system there seems to be no reason to doubt. The subjective symptoms which are noted are of a nature to point to such a cause, and the bronzing of the skin is another sequence dependent upon the same origin. It is pretty well established at the present day that many affections, characterized by an increase in the amount of pigment of the skin, are due to disturbed sympathetic innervation. Crocker states that the study of Addison's disease has made it highly probable that, whenever the abdominal sympathetic, especially the solar plexus, is irritated general pigmentation is likely to ensue. Greenhow and McCall Anderson do not look upon the symptoms as dependent upon destruction of the supra-renal capsules but upon the extension of the morbid process to the neighboring parts, especially to the solar plexus and semi-lunar ganglia. The general consensus of authorities of to-day is that there exists involvement of the sympathetic nervous system.

That this process is a severe one the general prostration and rapidly fatal termination of a certain number of cases show very plainly. But, in

addition to this, we have anatomical proof furnished in the profound alterations observed in the suprarenal capsules, in the greater number of cases in which necropsy has been performed. Addison was not far from the truth when he stated that the disease was due to these alterations in the capsules—he builded better than he knew. The remarkable investigations and demonstrations of modern investigators have conclusively shown that the suprarenal capsules are ganglia of the sympathetic nervous system directly connected with the solar plexus and semi-lunar ganglia. When we take into consideration the degenerative changes observed in the capsules, in some cases, there can be no room left to doubt that the involvement is a very serious one. This discovery also easily accounts for the fact that, at some post-mortem examinations, the capsules were found to have suffered no change, a circumstance which would seem to indicate that the process begins most probably in the ganglia situated higher up.

To make a short digression. It is admitted on the part of all authors that functional disturbances of the glands of the skin are also dependent upon disturbed sympathetic innervation. That sympathetic nerves preside over glandular functions is admitted and the glands of the skin are subject to the general law. This is especially true of those disturbances of function characterized by an increased amount of secretion. Prominent among functional cutaneous disorders is hyperidrosis, of which bromidrosis is merely a variety in the majority of cases. Whether the odor be due to the bacterium foetidus, to chemical decomposition, or to direct nervous influence as maintained by E. Monin, we need not consider here. The main point to bear in mind is the increased amount of sweat. This, when universal, denotes a more profound implication of the nervous system than when localized in some particular area.

In the case which I have outlined above there existed for some little time a general bromidrosis, indicating a rather serious involvement of the sympathetic nervous system. The intensity of the odor also tended to show that the process was a severe one. The sudden onset and as sudden disappearance would further go to support the claim of its nervous origin. The presence of microorganisms or of chemical decomposition could hardly be claimed although either one would not militate against the assumption of a neurotic origin for the hyperidrosis.

The fact of the presence of this symptom is interesting on account of its rarity in connection with Addison's disease and because, as stated above, it shows the profound involvement of the sympathetic nervous system which must have existed in the case. We find then that the skin is pigmented and that the functions of a set

of glands are also changed. In other words, two manifestations of an entirely dissimilar character and which we are accustomed to study separately are here found to be coincident and, beyond any doubt, dependent upon a common origin.

The lack of time and opportunity have prevented my making a study of this question. There is no doubt, whatever, in my mind that other causes of a like nature have occurred, but the importance of the graver malady as well as its comparative rarity completely overshadowed the importance of the symptom which probably is one of frequent occurrence—the bromidrosis.

A feature which was observed and which might partially account for the foetid sweat is the fact noted in the history that there was no pigmentation of the mucous membrane of the mouth. The explanation that this would furnish would be that the energy usually directed to the mucous membrane had been diverted to other channels, or, in other words, the perverted innervation was transferred from the mucous membrane to its external congener, the skin. This process is not an unusual one. We observe it, for instance, in erythema nodosum in which the eruption rapidly disappears to give way to a bronchitis, and this in turn leaves to be followed by a recurrence of the eruption.

In this short clinical contribution I have merely desired to sketch an interesting condition, and, so far as I know, a peculiar case. While the literature of Addison's disease is plentiful there is really but little that is tangible. In the light of modern anatomical investigations, however, we can see the promise of great improvement in the future therapeutical measures to be employed, as well as in the more thorough and intelligent pathological investigations which will be made.

5 South Broadway.

NOTES ON A CASE OF TETANY.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY JACOB SCHNECK, M.D.,

OF MT. CARMEL, ILL.

Under the various names of tetany, tetanella, idiopathic muscular spasm, and carpo-pedal spasm, we find described a variety of cases which have, as prominent symptoms, more or less tonic contractions of the muscles of various parts of the body, beginning usually at the extremities and passing, in somewhat regular succession, to the muscles of the body and head. The consciousness of the individual is not disturbed during the paroxysm.

The symptoms of this disease trench closely on those of a number of the functional neuroses; and it is probable that many of the cases reported un-

der this heading are really spasms due to reflex irritation, caused by teething or a disordered condition of the alimentary canal; or to irritation produced in the nerve-centres by the distal ends of nerves, leading to them, being involved in cicatrices or other inflammatory products; these cases are permanently cured by removing the cause of the irritation. It is also probable that in this category cases have been reported which should be described under the title of hysteria.

The causes usually assigned as producing tetany are exceedingly numerous and various; chronic and debilitating diarrhoea, lactation and pregnancy, stand first, perhaps. Typhoid fever, rheumatism, measles, pneumonia, Bright's disease, small-pox, cholera, malaria, exposure to cold, anæmia, sexual excesses, alcoholism, excision of thyroid gland, intestinal worms, disordered stomach from undigested food, lead poisoning, and epidemic influences, have all been thought to be causes. In reading over the reports of some cases one is led to believe that many of the above named causes are only coincidences, and had nothing to do with inducing the disease. An important diagnostic point of this disease is the tendon-reflex action produced by pressing on the large vessels and nerves (Trousseau's symptoms). This is not always present, but in no other disease has it ever been recorded.

Chvostek was the first to direct attention to the increased mechanical excitability of the muscles and nerves in this disease; he found in many cases that during the latent period the calf-muscles were slightly contracted. During the paroxysms consciousness is intact; and the muscular spasms are tonic.

The present light on the pathology of this disease points to the nerve-centres as the site of disturbance.

Herz thought the disease was due to anæmia of the spinal cord. A. Jacobi attributes it to meningeal hyperæmia. Gowers teaches that it is probable that the primary pathological lesion is in the motor cells of the cerebral and spinal structures; and that thus is explained the tendon-reflex symptoms usually present in this disease. Whatever the pathology may be, there appears to be an inability to inhibit in the nervous and muscular organs.

I am induced to offer these notes on the following case for three principal reasons:

1. Tetany is a disease whose limits and symptomatology are not well defined.

2. The case which fell into my hands had the signs, usually given as belonging to this disease, well-marked. In addition there were other prominent symptoms, which I do not find given in any of the accounts of the disease which I have consulted, viz.: the absence of normal reflex excitability in the extensor muscles, as shown by the want of the tendon reflex action of the exten-

sors of both the upper and lower extremities. And also the Argyll-Robertson pupil; both of which signs improved and became normal *pari passu* with the diminution of the number and severity of the attacks.

3. For the purpose of putting on record the treatment and its result, so that the profession may give it a further trial.

Case.—Oct. 23, 1889, Clara I. Brine, of Grayville, Ill., was brought to my office; she being a well developed, bright and healthy looking girl of ten years. The mother and father, who accompanied her, were both above the average in size, of intelligent bearing, and barring a few slight attacks of unimportant sickness, had always been healthy. Their five other children were all well developed. Clara had been healthy until three years since, when she suffered from some ailment of the bladder, but which was of temporary duration. Near two years ago, while in her usual health, she was suddenly seized with a swimming sensation and fell backwards on the floor; not, however, losing consciousness. Attacks of this character occurred at frequent intervals for nearly one year. She usually avoided falling by holding to some object until the sensation passed off. The physician who treated her told the parents the attacks were caused by some heart disease. Gradually these paroxysms were ushered in, or preceded, by more or less tonic cramps of the lower limbs; felt most severely at the knees; when the feet were involved, the toes would be drawn together and towards the sole of the foot. Later the upper extremities, and finally the jaws, became involved in the tonic contractions; but as they did so, the dizziness became less and the cramps of the lower limbs grew lighter, and for the last six months had ceased entirely; while those of the upper extremities, neck, and jaws, had grown correspondingly more severe and more frequent; averaging about ten a day; being most frequent during the forenoon, but never occurring during sleep. In some of the most severe attacks there was decided opisthotonos. In all those attacks consciousness was never lost. During the past year she had been treated by a physician for epilepsy. During the time of her visit to my office, while I was familiarizing myself with a history of her case, she was seized with a severe paroxysm, while in the midst of a sentence, and when not in the least excited. It came without any premonition and involved both upper extremities, and the muscles of the neck and jaws, in the order named. The muscles were so rigid that she was unable to speak, swallow, or move the head; the elbow-joints were flexed and the arms held rigidly from the side; the right hand was closed into a hard fist; the fingers of the left were first irregularly over-extended, then drawn together, the two outer coming under the two inner ones, while

the thumb was drawn down to the palm, forming the obstetric hand. The face became full and flushed. This condition lasted near two minutes.

The paroxysm was accompanied by radiating pains in the parts involved. "A sharp pain, with other pains shooting out from it," was her expression. She complained, after the attack, of numbness and formication in the muscles affected, also of ringing in the ears. Examination revealed slight oedema of the hands and face; tendon-reflex of knees and wrist entirely absent; Argyll-Robertson pupil well marked; pulse 120 per minute, small and hard. Had always suffered slightly from constipation; appetite good; sleeps well and quietly; temperature normal. There was no tenderness along the spine or over the ovaries, or any other part of the body; not subject to excessive perspiration; nervo-muscular irritability could not be produced by raking finger-nail in front of ear; there was no nausea or vomiting after attacks; she had not been a bottle-fed infant; had never suffered from rickets or laryngismus; did not pass large quantities of urine after paroxysms; pressure on the large blood-vessels or nerves did not bring on an attack; applying cold water to hands failed to cut short a paroxysm.

The treatment and progress of the case were as follows:

October 23, 1889.

R. Liquor potass. arsenitis, ʒj

Sodæ brom., ʒ ss.

Aqua, ad. ʒ iv. ℥.

Sig.—One teaspoonful after meals.

R. Antifebrin, gr. xxx.

Divide into 15 capsules.

Sig.—One capsule before meals.

October 31, symptoms very slightly improved; averaged five paroxysms per day since the former visit; pulse 120; tendon-reflex of the extremities imperceptible. Argyll-Robertson pupil still marked.

Thinking she might be afflicted with worms, I gave the following:

R. Hydrarg. chlor. mitis, gr. ij.

Sodæ bicarb. santonine, āā gr. vj.

Mix fiat chart No. vj.

Sig.—One powder at 4, 6 and 8 P.M. on consecutive nights.

Then to begin the following:

R. Fl. ext. conium, ʒj.

Sig.—Eight drops after each meal.

R. Glonoin, ʒ iv.

Sig.—Two drops two hours after meals.

Nov. 12.—Had passed no worms from santonine. During the first six days she had nineteen paroxysms, and none during the last five. Continues the two last prescriptions.

Dec. 4.—Had no paroxysm since last visit; tendon reflex of both upper and lower extremities nearly normal; pupil responds properly to light. Continued the nitro-glycerine and stopped the conium.

Feb. 3, 1890.—Had no attack since last report; continued treatment.

May 10, 1890.—Reports herself as entirely well, and has taken no medicine for two months.

DIAGNOSIS AND OPERATIVE TREATMENT OF GUNSHOT WOUNDS OF THE STOMACH AND INTESTINES.

Read by Invitation in the Surgical Section of the Tenth International Medical Congress, August 8, 1890.

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(Concluded from p. 363.)

2. Treatment of Gunshot Wounds of the Stomach and Intestines.

The propriety of surgical interference in cases of gunshot wounds of the stomach and intestines will depend on one of two things:

1. Dangerous internal hæmorrhage.
2. Visceral wounds of the stomach or intestines large enough to permit of extravasation and the escape of hydrogen gas on applying the diagnostic test.

Alarming intraperitoneal hæmorrhage furnishes an urgent indication for treatment by laparotomy irrespective of the existence of the visceral lesions of the gastro-intestinal canal. In these days of aggressive surgery it would indeed be unjustifiable to permit a patient to die slowly but surely from hæmorrhage from an intra-abdominal wound which in itself is amenable to successful treatment by prompt surgical means.

The signs and symptoms of profuse internal hæmorrhage come on soon after the injury has been inflicted, and are so plain and significant that they can hardly be misinterpreted even upon a brief and superficial examination. The progressive acute anæmia, the conditions of the pupils and pulse, and the complexus of nervous symptoms which attend alarming internal hæmorrhage present a clinical picture which, when once seen, is never forgotten and always recognized.

In such cases no time should be lost in looking for evidences of the existence of wounds of the gastro-intestinal canal, or in applying the hydrogen gas test, as the prime and most urgent indication is to gain access to the bleeding vessels by opening the abdomen in the median line, and then to arrest the hæmorrhage at once by compression until the bleeding points can be secured by ligation or the antiseptic tamponnade. After the hæmorrhage has been arrested, the whole gastro-intestinal canal, or such part of it as, from the course of the bullet, is known to have been exposed to injury, is tested by insufflation of hydrogen gas for the purpose of ascertaining in as

short a time as possible, the existence, location and number of perforations.

In cases in which, on account of the absence of dangerous hæmorrhage, the symptoms are less urgent, it is important to determine the necessity of treatment by laparotomy by resorting to the hydrogen gas test for the purpose of diagnosing the existence and size of perforations of the gastro-intestinal canal. If through insufflation can be made, it is proof positive that no perforations exist, or, if present, that they are too small for extravasation to occur, and in the absence of other indications for abdominal section it is advisable to pursue a conservative course of treatment. Such patients are given an opiate to diminish the peristaltic action of the bowels; an absolute diet is ordered and rest in bed enforced for at least a week, while infection from without is prevented by subjecting the external wound to rigid antiseptic treatment.

If the hydrogen gas test, either by rectal insufflation or direct inflation of the stomach, yields a positive result, sufficient and reliable information has been gained to warrant laparotomy, as the surgeon has then satisfied himself that he has to deal with an injury which, if not properly treated, is almost certain to result in the death of the patient.

Laparotomy for Gunshot Wounds of the Stomach and Intestines.

I have already insisted that in every perforating gunshot wound of the abdomen, all necessary preparations for laparotomy should be made before the existence of visceral wounds of the stomach or intestines has been demonstrated by the application of the hydrogen gas test, as the latter procedure necessitates the administration of an anæsthetic. The stomach can be inflated without an anæsthetic and the existence or absence of perforations demonstrated before any definite plan of treatment is proposed, but rectal insufflation of hydrogen gas should never be undertaken in the diagnosis of gunshot wounds of the gastro-intestinal canal without complete anæsthesia.

Before I was able to demonstrate the existence of visceral wounds of the stomach and intestines without opening the abdominal cavity, I never succeeded in obtaining the consent of the patient and friends to make a laparotomy in cases of gunshot wounds of the abdomen; but since I have been able to tell the people that the course to be pursued will depend upon the result of the test, I have not met with a single refusal. The hydrogen gas flame at the wound of entrance is an argument more potent than words in convincing laymen of the necessity of active surgical interference. If the public understands that the abdomen will only be opened after the surgeon has satisfied himself and has demonstrated the existence of a mortal injury, the patient and his friends will be only too anxious to avail them-

selves of the benefits to be derived from the only resource which promises any hope of saving life.

Medico-Legal Responsibilities in the Performance of Laparotomy in the Treatment of Perforating Wounds of the Abdomen.

As in private practice the treatment of penetrating wounds of the abdomen always involves great medico-legal responsibilities, it becomes of the greatest importance to arrive at positive and reliable conclusions in reference to the character of the injury before the patient is subjected to the additional risks to life incident to an abdominal section.

We will suppose a case. In a quarrel a man is shot in the abdomen. The assailant is placed under arrest. The surgeon who is called establishes the fact that the bullet has entered the abdominal cavity, and from the point of entrance and its probable direction he has reason to believe that it has wounded some part of the gastro-intestinal canal, and he concludes to verify his diagnosis by an exploratory laparotomy; the operation is performed, the gastro-intestinal canal is examined in its whole length, but after the most careful inspection no visceral wound is found. Over an hour is consumed in the examination, during which time the peritoneal cavity is exposed more or less to infection. The wound is closed and the patient dies of shock in two or three hours, or of septic peritonitis on the third or fourth day. The attorney for the State charges the defendant with murder. During the trial the defense will very naturally raise the questions: "Did the man die from the effects of the injury or the operation?" "Shall the defendant be tried for assault and battery or for murder?" During the trial the attending surgeon is made a target for a volley of a medley of scientific and unscientific questions by the cunning attorney for the defense in the attempt to save his client from the gallows or a sentence of imprisonment in the State Prison for life, at the expense of the reputation of the surgeon and the respect and good name of the profession he represents.

This picture is not overdrawn. Such cases have happened and will happen again. It is entirely different if the surgeon can, by means of the hydrogen gas test, ascertain the existence or absence of fatal complications without subjecting the patient to any additional risks to life. If the test yields a positive result, the indications for an operation are clear, and are understood and appreciated by laymen who may serve on the jury.

If a laparotomy, performed in the treatment of a mortal injury, is followed by a fatal termination, the result must be charged to the person who inflicted the injury and not to the surgeon who failed in his attempt to save his patient from certain death. If the operation proves successful, the surgeon has not only saved a life, but

he has been at the same time instrumental in diminishing the severity of the sentence of the one who inflicted the injury.

Preparation of the Patient.

A patient suffering from a perforating wound of the abdomen should be properly prepared before he is subjected to examination by the hydrogen gas test, and, if this yields a positive result, to laparotomy. If the stomach is filled with food, a salt water emetic should be given for the purpose of evacuating the stomach. The rectum and colon should be emptied by a copious enema of lukewarm water to which may be added a tablespoonful of common salt. These precautions greatly facilitate the application of the hydrogen gas test, and guard against possible sources of error in diagnosis; at the same time they leave the gastro-intestinal canal in a better condition for operative treatment and a speedy repair of the sutured wounds. A hypodermatic injection of one-fourth of a grain of morphia and one one-hundredth of a grain of atropia should be given shortly before the anæsthetic is administered, as these drugs in the doses specified assist the action of the anæsthetic, secure rest for the intestines and sustain the action of the heart. If the patient is much prostrated two ounces of whisky diluted with four ounces of warm water should be given *per rectum*. The external wound and the whole abdomen must be thoroughly disinfected.

Operating Room.

The room in which the examination is to be made, and possibly laparotomy performed, should be cleared of all draperies, pictures and unnecessary furniture, and the temperature should not be less than 80° F. It is a good plan to sprinkle the bare floor, walls and ceiling with a strong solution of corrosive sublimate or carbolic acid. An ordinary table covered with blankets and a clean sheet will answer for an operating table. Wash basins, dishes and pitchers are to be sterilized by heat. Plenty of aseptic sponges, clean towels, and hot sterilized water must be provided. A hypodermic syringe and the necessary stimulants must never be absent. A sufficient quantity of hydrogen gas can be generated in from five to fifteen minutes. The articles necessary for applying the hydrogen gas test are a stomach tube and a four gallon rubber balloon in which the gas is stored, which is connected by four or six feet of rubber tubing with the short rectal tube, for which the vaginal tip of an ordinary Davidson's syringe can be used. Wax tapers are useful in lighting the escaping gas.

Incision.

Great diversity of opinion still prevails in regard to where the incision should be made. In the majority of cases the median incision affords

advantages which give it the preference. It should always be selected in cases of gunshot wounds of the stomach, and where the wound of entrance is located near the median line, and where it is known that the bullet has taken an antero-posterior course. A median incision affords most ready access in the treatment of wounds of the small intestine.

The result of the hydrogen gas test will prove of much value in deciding the location of the incision. If, in gunshot wounds of the upper portion of the abdomen, direct inflation of the stomach through an elastic tube reveals the existence of perforation of this organ, the median incision should be selected. If rectal insufflation yields a positive result before the gas has passed the ileo-cæcal valve, the incision should be made over the wounded portion of the colon, which is usually indicated by the course of the bullet. A wound in the transverse colon can be found and dealt with most efficiently through a median incision, while perforation of the cæcum or ascending colon calls for a lateral incision directly over the wounded organ, while a lateral incision on the left side is indicated if from the direction of the bullet it is evident or probable that the colon below the splenic flexure is the seat of the visceral injury. In the treatment of a gunshot wound of the colon through a lateral incision it is absolutely necessary to make the incision sufficiently long so as not only to facilitate the finding and suturing of the perforation, but also to enable the surgeon to search for and treat additional injuries. By suturing the external wound with several rows of buried sutures there is but little danger of a ventral hernia following.

Laparotomy performed for the arrest of dangerous hæmorrhage should always be done by making a long median incision which will afford the most direct access to the different sources of hæmorrhage. Very often it will be advisable to make the incision in the line of the wound of entrance, more especially in cases where a lateral incision is indicated from the location of the wound, from the course of the bullet, and from the results obtained by application of the hydrogen gas test.

Arrest of Hæmorrhage.

In perforating wounds of the abdomen profuse hæmorrhage is more frequently of parenchymatous and venous than of arterial origin. Gunshot wounds of the liver, spleen, kidneys and the mesentery give rise to profuse and often fatal hæmorrhage. After opening of the peritoneal cavity it is often very difficult to find the bleeding points, as the blood accumulates as rapidly as it is sponged out, and it becomes necessary to resort to special means in order to arrest the profuse bleeding sufficiently to find the source of hæmorrhage.

One of two resources should be employed: 1. Digital compression of the aorta. 2. Packing the abdominal cavity with a number of large sponges. Digital compression of the aorta below the diaphragm can be readily made by an assistant introducing his hand through the abdominal incision, which in such a case must be larger than under ordinary circumstances. Compression of the abdominal aorta immediately below the diaphragm will promptly arrest the hæmorrhage from any of the abdominal organs for a sufficient length of time to enable the surgeon to find the source of hæmorrhage and carry out the necessary treatment for its permanent arrest.

Hæmorrhage from a perforated, lacerated kidney may demand a nephrectomy. A similar wound of the liver is cauterized with the actual cautery or tamponned with a long strip of iodoform gauze, one end of which is brought out of the external wound. A wound of the spleen, if the hæmorrhage cannot be arrested by the anti-septic tampon, necessitates splenectomy. Very troublesome hæmorrhage is often met with from wounds of the mesentery.

When multiple perforations of the mesentery and visceral wounds of the stomach or intestines are the source of hæmorrhage, it is a good plan to pack the abdominal cavity with a number of large sponges to each of which a long strip of iodoform gauze is securely tied, these strips being allowed to hang out of the wound in order that none of the sponges may be lost or forgotten in the abdominal cavity after the completion of the operation. The sponges make sufficient pressure to arrest parenchymatous oozing as well as venous hæmorrhage if they are placed at different points against the mesentery and between the intestinal coils. The sponges are removed one by one from below upwards and the bleeding points secured as fast as they are uncovered.

The ligation of mesenteric vessels, both arteries and veins, should be done by applying the ligature *en masse*. Thornton's curved hæmostatic forceps is the most useful instrument for this purpose. Catgut should never be relied upon in tying a mesenteric vessel, as this material, for several reasons which it is not necessary to mention here, is greatly inferior to fine silk. Troublesome hæmorrhage from a large visceral wound of the stomach and intestines is best controlled by hemming the margin of the wound with fine silk. If hæmorrhage is profuse this must be attended to before anything is done in the way of finding or suturing of the visceral wounds.

Search for Perforations.

If the hydrogen gas test has been employed with a positive result before the abdomen was opened, there will be no difficulty experienced in finding the first opening. If the stomach was inflated directly through an elastic tube and the

test has shown the presence of a perforation, a median incision is made from the tip of the ensiform cartilage to the umbilicus and the stomach drawn forward into the wound. If no perforation is found in the anterior wall, the insufflation is repeated, and the escaping gas will direct the surgeon to the perforation. After closing the perforation the stomach is again inflated, and if a second perforation exists it is readily detected by this test. The possibility of the existence of a third perforation should be remembered, consequently a third inflation becomes necessary. A second and a possible third perforation can also be detected by inflating the stomach directly through the first and second perforations.

If the wound implicates the abdominal cavity below the stomach, the hydrogen gas test is applied by insufflation *per rectum*. If the test has yielded a positive result, the lowest perforation is readily found by examining the intestine at a point where the distended and empty portions join, as the leakage of gas through the perforation prevents inflation higher up. In one of my experiments I carried the inflation so far that the intra-abdominal pressure caused by an immense free tympanites not only prevented the inflation of the intestine above the first perforation, but it also forced out the gas from the intestine below the perforation. If, however, the track of the bullet is enlarged down to the peritoneum, as should be done in the diagnosis of all perforating gunshot wounds of the abdomen before the hydrogen gas test is applied, such an occurrence is impossible, as the gas will escape through the external wound as fast as it enters the peritoneal cavity.

If the intestine is found distended below the first discovered perforation, it is an absolute proof that no perforations exist lower down in the intestinal canal, and hence that it is unnecessary to lose any time in looking for perforations in that direction.

As soon as the lowest perforation has been found, rectal insufflation should be suspended. If possible, the perforated portion of the intestine should now be brought forward into the wound, and after emptying the intestine below the perforation as far as possible of its gas, the bowel is compressed below the perforation by an assistant, and the intestine higher up is inflated through the wound. As a matter of course, a perfectly aseptic glass tube should be inserted into the rubber tube instead of the tube used in the rectum. The inflation is now carried as far as the second opening, when the first opening is sutured, and after disinfection the intervening portion of the intestine is replaced in the abdominal cavity. Further inflation is now made through the second opening, and if a third one is found, the second is sutured, and so on until the entire intestinal canal has been thoroughly subjected to the test. By

following this plan extensive eventration is rendered superfluous and the overlooking of a perforation is made absolutely impossible. Extensive eventration in the search for perforations, and undiscovered perforations figure largely as causes of death in gunshot wounds of the abdomen treated by laparotomy, and both of these sources of danger are avoided by a thorough and systematic employment of the hydrogen gas test.

Suturing of Wounds of the Stomach and Intestines.

Trimming the margins of the visceral wounds is not only superfluous, but absolutely harmful, as it requires a useless expenditure of time and may become an additional source of hæmorrhage. The same can be said of the Czerny-Lembert suture. All that is required in the treatment of a visceral wound of the stomach and intestines is to turn the margins of the wound inwards and bring into apposition healthy serous surfaces by a few points of interrupted sero-muscular sutures. Fine aseptic silk should be used for the sutures. It is sufficient to use from four to six sutures to an inch. Wounds of the stomach should be sutured in a line parallel with the long axis of the organ. Wounds of the intestine should be closed transversely, with a view of preventing constriction of the lumen. Defects an inch and a half in length on the convex border can be closed safely in this manner without fear of causing intestinal obstruction, while much smaller defects on the mesenteric side often necessitate a resection, not only because the vascular supply in the corresponding portion of the intestine would be inadequate, but also for the reason that a sufficiently sharp flexion might be produced at the seat of suturing to become a source of intestinal obstruction.

Enterectomy.

Enterectomy often becomes necessary in cases of double perforation, and in marginal wounds of the mesenteric border. If in cases of multiple perforations it becomes necessary to make a double enterectomy, and the intervening portion of the small intestine is not more than two or three feet in length, it is best to resect it at the same time, as the immediate effect of the operation will be less severe than a double resection with a corresponding double enterorrhaphy. The mesentery corresponding to the portion of intestine to be removed should be tied in small sections with fine silk before the bowel is excised.

Restoration of the Continuity of the Intestinal Canal after Enterectomy by Lateral Apposition with Decalcified, Perforated, Moist, Bone Plates.

Cases of gunshot wounds of the intestines requiring enterectomy are always grave, and anything which can be done to shorten the operation must add to the chances of recovery. Circular enterorrhaphy requires a great deal of time and is less certain in its results than lateral apposition

with decalcified bone plates, and for these reasons the latter procedure deserves the preference in uniting the bowel after resection for gunshot wounds of the intestine. For the full technique of this part of the operation I must refer the reader to my article read in the Surgical Section of the American Medical Association at its last meeting, and published in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, June 14, 1890.

Omental Grafting.

If the bowel at the seat of suturing show evidences of contusion, the line of suturing and the damaged portion of the bowel should be covered by an omental graft, which is fastened in its place on the mesenteric side by passing two catgut sutures in the line of the mesenteric vessels through both ends of the graft and the mesentery, and tying them loosely. Before the graft is planted, the surface of the bowel and the surface of the graft which is to be brought in contact with it are scarified with the point of an aseptic needle.

Irrigation of Abdominal Cavity.

This is only necessary if fecal extravasation or escape of stomach contents has occurred, an accident which, if it has not occurred before the abdomen has been opened, should be carefully avoided during the manipulation of the wounded intestines. Flushing the peritoneal cavity with warm sterilized water not only clears it of infectious material, but acts at the same time as a stimulant to the flagging circulation. After completion of the irrigation the patient is placed on his side, and in this manner the fluid contents of the abdominal cavity are poured out. The cavity is then rapidly dried with large sponges wrung out of a weak antiseptic solution.

Drainage.

Cases which require irrigation also require drainage. Other indications for drainage are visceral wounds of the liver and wounds of the pancreas, spleen, and kidneys, where extirpation of the wounded part of the organ, or the whole organ is deemed unnecessary, and the existence of parenchymatous hæmorrhage which cannot be remedied by any of the different hæmostatic measures.

Closure of External Incision.

Incisions through the median line are rapidly closed by one row of silk sutures which include all of the tissues of the margins of the wound. Incisions made in any other place are to be closed by two or three rows of deep catgut sutures, and a superficial row of silk sutures.

After-Treatment.

Absolute rest must be strictly enforced. Opium must be given in sufficient doses to quiet the peristaltic action of the intestines. No food should be given by the stomach for at least forty-

eight hours. During this time brandy and water in small doses frequently repeated are agreeable to the patient, they quench thirst and exert a favorable influence upon the circulation. If more active stimulation is required to overcome shock and the effects of hæmorrhage, whiskey, ether, musk or camphor can be injected subcutaneously or *per rectum*, while the peripheral circulation is restored by applying dry heat to the extremities and trunk. Should symptoms of peritonitis set in, a brisk saline cathartic should be given at the end of forty-eight hours, as at this time the intestinal wounds will have become sufficiently united to resist the violent peristalsis provoked by the cathartic, while the removal of the intestinal contents and the absorption of septic material from the peritoneal cavity are not only the most efficient means of cutting short a fatal disease, but also of placing the wounds in the most favorable condition for rapid repair.

If the case progresses favorably, liquid food by the stomach can be allowed at the end of the second day and digestible solid food at the end of the first week. Under ordinary circumstances no effort is made to move the bowels until the end of the fourth or fifth day. If early feeding becomes necessary in marantic or exsanguinated patients, this can be done by rectal alimentation. Patients should not be allowed to leave the bed until the external wound has firmly united throughout, as any imprudence in this direction is liable to be punished by the formation of a ventral hernia. The sutures are removed on the eighth day and the patient is directed to wear an abdominal supporter for several weeks after he has left his bed.

SUGGESTIONS FOR THE CONSIDERATION OF MILITARY AUTHORITIES AND MILITARY SURGEONS.

The object of battle is to kill and disable the combatants until the question of victory is decided in favor of the army which exceeds in numbers, or is superior in courage or more skilled in warfare. Very little has been done so far in the way of aggressive surgical interference for heroes who fell mortally wounded in the line of battle in the defense of their country, their ruler, their families, their homes and their rights. The time has come when in case of war adequate provisions should be made on the field of battle near the rear line for the prompt treatment of perforating gunshot wounds of the abdomen. It is difficult to conceive how many valuable lives have been sacrificed on the field of battle during the innumerable wars recorded in the history of the world which now are within the reach of successful surgical interference. Thousands of lives have been lost from internal hæmorrhage alone which could now be saved by an early laparotomy.

In future wars it is the duty of every civilized

nation to do all that modern surgery can do in the treatment of perforating gunshot wounds of the abdomen on the battle field. Every soldier who has been in active military service can recall instances where comrades dropped in the ranks with a mortal bullet wound of the abdomen, who lived for several hours and died from hæmorrhage, often forgotten and uncared for in the excitement of the conflict. Justice, patriotism, humanity and the present status of abdominal surgery demand that in future wars enough men shall be detailed from each company to convey the severely wounded to the rear of the line of battle, where they can receive prompt and efficient surgical aid, and where, if die they must, the last hour of their life shall be peaceful, surrounded by those who will add to their comfort and administer words of consolation as the immortal spirit leaves the maimed body for the future world.

For the purpose of carrying into effect the modern aggressive treatment of perforating gunshot wounds of the abdomen in military practice, it will be necessary to erect a large tent for every brigade, in a safe place, but sufficiently near the line of battle to be within easy reach. This tent should be heated with gas stoves and provided with all the necessary instruments, dressing material and medicines required in the operative treatment of gunshot wounds of the abdominal viscera. One surgeon specially qualified for his work should be detailed to superintend the surgical work, assisted by a sufficient number of reliable assistants. This tent should be used exclusively for the treatment of perforating wounds of the abdomen.

If, as is so often the case in gunshot wounds of the abdomen made with bullets of large calibre, life is threatened by hæmorrhage, the abdomen, after rapid but thorough disinfection, should be opened at once, and after the bleeding has been arrested, visceral injuries of the gastro-intestinal canal should be sought for by applying the hydrogen gas test in the manner described above. The use of this test will not only shorten the time required in the completion of the operation, but it will also guard against two grave sources of danger—extensive eventration and leaving undiscovered and unsutured perforations. Enterectomy will be more frequently made necessary in military than private practice on account of the large size of projectiles used in warfare as compared with those used in private life. Restoration of the continuity of the intestinal canal after enterectomy for gunshot wounds of the abdomen should be done by a method which saves valuable time and secures the best results—advantages which are gained by the use of decalcified, perforated bone plates. Patients who rally from the operation should subsequently either receive the necessary after-treatment in hospital tents,

or should be later transported with the greatest care to the nearest hospital.

The Correct Diagnosis and Proper Treatment of Gunshot Wounds of the Stomach and Intestines Require a Degree of Skill and Dexterity which can only be Acquired by Experiments on the Lower Animals. Even the minutest descriptions of the details to be observed and applied in the diagnosis and treatment of gunshot wounds of the abdomen are utterly inadequate to prepare a surgeon to interpret correctly the symptoms and signs presented by penetrating gunshot wounds of the abdomen, or to meet the often unexpected emergencies in their treatment. Operative courses on the cadaver are valuable and useful, but they never can take the place of experiments on the living animal. This is more especially true in reference to the use of the hydrogen gas test as a diagnostic measure, and the manual dexterity required in the surgical treatment of internal hæmorrhage and visceral wounds. A certain amount of experimental experience is absolutely required in the preparation of the surgeon for the kind of abdominal work which requires not only courage, good judgment, and a thorough knowledge of every step in diagnosis and treatment, but also a manual dexterity which cannot be acquired in any other way.

CONCLUSIONS.

1. In gunshot wounds of the abdomen, in the absence of external fæcal extravasation and prolapse of the omentum, it is absolutely necessary to establish the fact that penetration has or has not taken place by enlarging the wound down to the peritoneum, if the bullet has entered the peritoneal cavity, or in non-penetrating wounds, sufficiently far to show conclusively that the peritoneal cavity has not been invaded.

2. In a fair percentage of cases a bullet which penetrates the abdominal cavity does not produce visceral injuries which require treatment by laparotomy, and such cases; as a rule, recover without surgical interference.

3. Absence of visceral lesions which require treatment by laparotomy is most frequently met with in perforating gunshot wounds of the abdomen, if the wound of entrance is at or above the level of the umbilicus, and if its course is in an antero-posterior direction.

4. In transverse and oblique gunshot wounds of the abdomen at a point below the level of the umbilicus, multiple perforations of the intestines may be confidently expected.

5. The general and local symptoms, with the exception of external fæcal extravasation, are of absolutely no value in the differential diagnosis between simple penetrating gunshot wounds of the abdomen and penetrating gunshot wounds of the abdomen complicated by serious visceral injuries which demand prompt surgical interference.

6. Alarming internal hæmorrhage caused by perforating gunshot wounds of the abdomen can be recognized by the symptoms which characterize progressive acute anæmia, and by the physical signs due to the presence of fluid in the free peritoneal cavity.

7. Dangerous internal hæmorrhage furnishes a positive and urgent indication for treatment by laparotomy. The incision in such cases should be ample and through the median line.

8. After opening the peritoneal cavity for the treatment of alarming hæmorrhage, temporary hæmostasis should be secured by digital compression of the aorta below the diaphragm, or by packing the abdominal cavity with a requisite number of large sponges until the bleeding points can be discovered and the hæmorrhage arrested by permanent measures.

9. The existence of wounds of the stomach and intestine large enough to permit the escape of the contents of these organs can be infallibly demonstrated by the application of the hydrogen gas test before the abdomen is opened.

10. Direct insufflation of the stomach through an elastic tube is preferable to rectal insufflation as a diagnostic test in all cases where, from the location of the wound of entrance and the probable course of the bullet, there is reason to believe that this organ is the seat of injury.

11. The existence and probable location of gunshot wounds of the intestines can be ascertained by rectal insufflation of hydrogen gas.

12. Through insufflation without evidences of free tympanites or escape of gas through the external wound demonstrates either the absence of perforations, or that if present they are too small for leakage to take place; consequently the result of the test is a strong argument in favor of non-interference.

13. The hydrogen gas test should invariably be relied upon in searching for the perforations after the abdominal cavity has been opened, as this method of examination, if properly and carefully conducted, makes extensive eventration unnecessary, and never fails in revealing every perforation.

14. After opening the abdominal cavity for the treatment of gunshot wounds of the intestines, the lowest perforation is pointed out by rectal insufflation of hydrogen gas, but in the search for additional perforations the inflation should be made directly through the perforation last sutured, while the portion of the intestines which has been tested and the perforation sutured is replaced in the abdominal cavity.

15. The external wound should never be closed until the whole length of the gastro-intestinal canal has been subjected to the hydrogen gas test, in order to guard against the possibility of leaving a perforation undiscovered.

16. The hydrogen gas test under ordinary

circumstances does not cause fæcal extravasation, and consequently does not increase the subsequent risks from peritonitis.

17. Pure hydrogen gas is most suitable for insufflation of the gastro-intestinal canal for diagnostic purposes, as this substance is non-irritating, non-toxic, and possesses valuable inhibitory antiseptic properties, while its exceedingly low specific gravity adds still more to its value when used for this purpose.

18. By following the indications furnished by the hydrogen gas test the surgeon relieves himself of all medico-legal responsibilities in the operative treatment of penetrating gunshot wounds of the abdomen.

19. A gunshot wound of the gastro-intestinal canal sufficiently large to permit escape of the contents of the stomach or intestines must, for all practical purposes, be regarded as a mortal injury, and on this account its treatment by laparotomy is urgently indicated.

20. Laparotomy in the treatment of gunshot wounds of the stomach and intestines should be performed as soon as possible after the infliction of the injury, and always before a septic peritonitis has had time to develop.

21. The closure of bullet wounds of the stomach and intestines is accomplished most speedily, and with a sufficient degree of safety by the application of one row of interrupted sero-muscular sutures of fine aseptic silk.

22. If enterectomy becomes an unavoidable necessity in the treatment of gunshot wounds of the intestines, the continuity of the intestinal canal should be restored by making an anastomosis between the closed ends by lateral apposition with decalcified, perforated, moist, bone plates, as this procedure requires less time and accomplishes the desired result with a greater degree of safety than circular enterorrhaphy.

23. Flushing of the abdominal cavity is to be reserved for cases in which the peritoneal cavity has become contaminated by escape of the contents of the stomach or intestines.

24. Drainage becomes necessary in cases in which the peritoneal cavity has become infected, also in injuries of the liver, and in wounds of the spleen, kidney or pancreas not treated by partial or complete extirpation of the injured organ.

25. The adoption of adequate provisions for the prompt, aggressive treatment of perforating gunshot wounds of the abdomen in hospital tents in the rear of the line of battle, should receive the most serious consideration of military authorities, and military surgeons who will have charge of the wounded in the wars of the future.

26. The necessary diagnostic skill, and requisite manual dexterity in the operative treatment of gunshot wounds of the stomach and intestines, can be acquired only by experiments on the lower animals.

MEDICAL PROGRESS.

DISINFECTING POWER OF PEROXIDE OF HYDROGEN (H_2O_2).—DR. ALTEHOFER of Rostock, gives us, in the *Cent. f. Bakteriologie und Parasitenkunde*, a careful study of the disinfecting power of this substance, for which he claims the especial merit that it does not alter the appearance, taste or smell of water to which it has been added.

The first experiments were made with spring water, the second with hydrant water and a third with river water. The first contained 560, the second 180, and the third 1800 germs in each cubic centimetre. To these several waters were added H_2O_2 in the proportion of 1:5000 and 1:10000, and after an exposure of 24 hours inoculations of gelatine and agar-agar were made. In each case abundant colonies developed, but those from the weaker solution were in greater number and more vigorous.

A second series was made upon hydrant water to which sewage had been added in the proportion of two per cent. and one-half per cent. The solutions were not sterilized even when H_2O_2 was added in the proportion of 1:2500.

Observations were made upon solutions containing H_2O_2 in the proportion of 1:1000. Three samples of potable water were used containing respectively, as was ascertained by cultivation, 160, 600, and 6,000 germs per cubic centimetre. The results in these three cases were, at the end of the seventh day, for the first sample three colonies, the second two, and the third ten. While this shows that the peroxide, in the proportion of 1:1000, is not sufficiently powerful to destroy all the ordinary germs of drinking water, it will destroy the greater number. Solutions of this strength impart a slight metallic taste to water, but this disappears shortly after it has been added. To 100 cubic centimetres of sterilized water one-half ccm. of sewage was added and one ccm. of H_2O_2 . This mixture was found to be absolutely sterile at the end of twenty-four hours.

Experiments made with the typhoid and cholera bacillus showed that they were completely destroyed when H_2O_2 was present in the proportion of 1:1000.

The author recommends the disinfection of drinking water by this means in times of epidemics not only from its efficiency and cheapness, but also because the potability of the water is not altered.

THE GRIPPE CONSIDERED FROM A SURGICAL STANDPOINT.—The recent epidemic of la grippe has called into requisition the services of the physician rather than of the surgeon, but an article by PROF. VERNEUIL, published recently in the *Bulletin de l'Académie de Médecine*, shows that the disease presents many points of surgical interest.

M. Verneuil points out that in most of the surgical affections caused by the grippe, the main pathological feature is suppuration. Thus he observed suppurative inflammations of the eye, ear, joints, purulent pleurisy and pericarditis, the formation of superficial or deep abscesses of the skin and glands, and collections of pus in the antrum of Highmore and frontal sinus. These conditions were treated by appropriate surgical measures, but it was found that the prognosis was less favorable than under ordinary circumstances. This is not surprising, since the grippe, like other acute infectious diseases, causes marked depreciation of the patient's general health and therefore adds materially to the dangers of any surgical operation that may have to be undertaken. Aside from this, it was observed that when patients who were in the stage of recovery from an operation were attacked by the disease, the complication gave rise sometimes to serious consequences. M. Verneuil therefore lays down the rule that excepting the conditions above mentioned, where urgent surgical interference may be indicated, it is better to postpone all surgical measures until the patient has recovered from the grippe. Owing to the slow and tedious convalescence which characterized the disease, it may not be possible to delay the operation until recovery is assured, and in this case the best that can be done is to improve the patient's general condition as much as possible by appropriate medication.

According to the observations of Drs. BERGER and PEYRAT, surgical diseases ran the same course during the prevalence of the grippe as under ordinary circumstances. On the other hand, Dr. WALTHER, of the Hospital de la Charité, states that patients who developed the grippe shortly after operations in which the wound was not immediately closed, as in the treatment of cold abscesses, exhibited a remarkable slowness of the healing process. Cicatrization was arrested to a certain extent, and was not re-established until several days after the complete cessation of the acute febrile symptoms. In the case of wounds sutured without drainage, healing was not interfered with, but usually two or three days after operation a sudden rise of temperature was observed. The cause of this fever could not be demonstrated, since on removal of the dressings the wound appeared perfectly healthy.

DR. DEMONS, of Bordeaux, mentions quite a number of surgical complications of the grippe which have come under his observation. Otitis, complicated by suppuration in the middle ear or mastoid cells, was met with in several instances. Severe inflammation of the eye occurred in some cases, while in still others an orchitis was suddenly developed without a previous history of gonorrhoea or contusion of the testicle. Fortunately, however, this disappeared as rapidly as it had appeared, without going on to suppuration.

There was also a formation of abscesses in the axilla, in the iliac region, and upon the leg, although none of the ordinary causes of suppuration could be found to exist. M. Demons states that all wounds in the wards of the hospital were slow in healing, and in many instances suppurated profusely. In his opinion, during an epidemic of the gripe it is necessary to abstain from all operative procedures, but especially those involving the buccal, nasal, pharyngeal and respiratory tracts, which are especially apt to be attacked by the disease.

Judging from these observations, the prognosis of operations performed during the gripe is worthy of careful consideration, and, if possible, all surgical measures should be postponed until the patient has recovered from the debilitating effects of the disease.—*International Journal of Surgery*.

CLOSTRIDIAL NEPHRITIS—A NEW FORM OF BRIGHT'S DISEASE.—DR. F. V. HOPKINS, of San Francisco, contributes an original, and apparently carefully carried out, bacteriological research to the *Pacific Medical Journal*. It is based upon the observation of a case of chronic nephritis, due, as he believes, to a peculiar microorganism which he terms "*Clostridium renale*." The description of the germ is as follows:

Circular cocci, $1.27\ \mu$ in diameter; rods, with rounded ends averaging $.6\ \mu$ in thickness by $3\ \mu$ in length, sometimes enlarging characteristically to bear a sporangium, oval in form, and measuring $1.27 \times 2.5\ \mu$. Spores circular, $.42\ \mu$ in diameter. Filaments of indeterminate length, sometimes $.6\ \mu$ thick throughout their whole extent, at others, $1.7\ \mu$ at one end and tapering at the other into branches, whose ends separate by fission into the usual round-ended rods $.6\ \mu$ thick by $3\ \mu$ long. Non-motile, pathogenic, infests the blood and is carried by it to the capillaries of the principal organs, which it obstructs.

This organism produces a chronic affection of the kidneys and other organs of the body, characterized by nervousness, sleeplessness, flatulent dyspepsia, albuminuria, dropsy, dyspnoea, and heart-failure. The occurrence of the germs in the urine, free and in casts, is its pathognomonic symptom.

The particular case in question, upon which the description is based, was that of a woman who suffered from nervous depression, dyspepsia, insomnia, and cardiac weakness. Her urine contained various peculiar forms of albumen. Delafield gives tests by which six different varieties of albumen are distinguished. Dr. Hopkins' patient passed still other varieties than these. We are not told the specific gravity of the urine, its daily amount, or that of the albumen, and in this and some other respects there seems to be a lack of careful clinical observation. Casts were found, however, which were composed entirely of bacte-

ria, occurring in the form of rods with rounded ends. These bacteria were cultivated under proper precautions, and inoculations were made in rabbits with the result, invariably, of causing albuminuria, dropsy, and death, with the bacteria in the kidneys and other tissues. The patient died, but no autopsy could be made.

Dr. Hopkins' claim to have discovered a new and peculiar form of nephritis cannot be said to be absolutely established, but he has done a service in calling attention to the importance of the bacteriological study of renal casts. The similar studies in bacteriological nephritis which have been made by others are given by the author, thus:

Babes, in Cornil et Babes' "*Bacteriologie*," p. 373, Figs. 197, 198, has described the "*Bacille de la nephrite bacterieuse*." "Cylindrical rods, with rounded ends $0.8\ \mu$ to $1\ \mu$ thick, and of very variable length, sometimes $1.6\ \mu$ to $2\ \mu$ and sometimes 20 to 50 μ , and sometimes curved. Habitat, in the urine and renal tissues of patients with diseased kidneys."

In 1880, Dr. Ballard reported a case of meat-poisoning that occurred at Welbeck, Nottinghamshire, England. Four died out of seventy-two that were affected. Bacilli were found plugging the capillaries of the Malpighian bodies in the kidneys, though the symptoms were choleraic. The tube-casts were of the hyaline variety (Klein, "*Microorganisms and Disease*," pp. 122-125).

The bacilli of swine-plague also attack the Malpighian corpuscles, but here the bacilli occupy the capsule, the capillaries being plugged with hyaline matter (*Ibid.*, p. 133).

Again, the bacillus anthracis may completely plug the capillaries of the glomeruli and of the renal cortex (*Ibid.*, Fig. 87, p. 160).

Bacillus tuberculosis also can obstruct the blood-vessels of the kidney (*Ibid.*, Fig. 92, p. 171).

The fungi *Aspergillus flavescens* and *A. fumigatus*, when injected into the peritoneum of rabbits, proved fatal by forming foci in the kidneys and other organs (*Ibid.*, p. 200; Lichtheim, in *Berlin Klin. Woch.*, 9 and 10, 1882).

Letzerich describes twenty-five cases of an acute dropsy of young persons, which he calls "*nephritis bacillosa interstitialis primaria*." This disease lasts from two to six weeks, and is due to bacilli which swarm in the urine. Twelve rabbits inoculated with pure cultures of these bacilli developed ascites in about fourteen days. The bacilli occurred "at the junction between the pyramidal and cortical portions of the kidneys" (*Zeitschrift für Klinische Medizin*, 1887).

Perhaps the criticism which may be more effectively made against Dr. Hopkins' claim to have discovered a new form of nephritis is that his case was one of general microbic infection, and that the kidneys were not the primary or chief centres of the morbid action.—*Medical Record*.

ON PSYCHOSES AFTER INFLUENZA.—KRÄPELIN (*Deutsche med. Wochenschrift*, 1890, No. 11) has observed a development of mental disorder after the departure of influenza in eleven instances. Among these were cases of simple psychical depression, of melancholia with delusions, acute states of exhaustion resembling the delirium of collapse, typical mania, and delirium tremens. The outburst of the psychical attacks regularly supervened at once upon the expiration of the bodily morbid phenomena; so also no elevation of temperature was ever noticed. The especially active causes of these psychoses was, therefore, apparently to be sought rather in the general enfeeblement of the organism than in the particular nature of the intoxication or toxæmia. The prognosis of these psychoses is very favorable; the treatment must be a generally strengthening one.

PLUMBISM AND ALCOHOLISM.—At a recent meeting of the Academy of Sciences, Paris, M. CHARCOT read a note on some experiments in plumbism carried out by MM. Combermate and François. They caused from one to five centigrams of carbonate of lead to be consumed daily by animals. At the end of about a month the nervous symptoms of saturnine poisoning made their appearance—such as epileptic fits, delirium, etc.—just as they are observed in man. This was, of course, not new; but the interesting point was that in certain of the animals experimented upon the administration of large doses of alcohol was found to hasten in a remarkable manner the advent of the nervous symptoms. The same thing was noticed when others of the animals were subjected to any abrupt emotional shock, such as fear. These facts were worthy of note, for in man a similar precocity of the nervous phenomena of plumbism was observed whenever those already suffering from lead poisoning were subjected to a moral shock or became addicted to alcohol.—*Lancet*.

OSTEOGENESIS.—On Tuesday, August 5, PROFESSOR OLLIER, of Lyons, read a paper on this subject at Berlin. He began by considering the growth of bone in general, and gave a full account of his researches into these questions, in which by a series of experiments performed on animals, as well as in consequence of the numerous operations which he had performed on man, he had been led to the following conclusions: New bone could in reality be formed from the periosteum alone, and only under certain well-known conditions. It was perfectly hopeless to expect any complete and permanent growth of bone to take place unless the periosteum surrounded it. It was, indeed, true that if the parts were aseptic for a time, the new bone, or implanted bone, as the case might be, seemed to grow,

but this was only for a time. Within six months necrosis took place, and the dead bone, if loose, was thrown off, or might remain encysted in some instances, and, if it did no harm, was certainly of no advantage to its possessor. This was a fact which had been known for many years, and there was, he believed, notwithstanding what had been said to the contrary, no exception to it. If a more minute examination were made of the implanted bone, it would be seen that the changes which took place in it were as follows: It was penetrated by blood-vessels from the surrounding bones and tissues, but these vessels played no part in its nutrition, but served only to further its absorption. Perhaps no more striking evidence of the value of the periosteum could be given than the following: On one of his patients, a young woman, he had operated three times, resecting her elbow-joint on each occasion, but the periosteum had been retained, and on each occasion she had made an excellent recovery. Practically there were three kinds of plans which might be employed, which might be styled: 1, autoplasmic, in which the same bone was used to repair some deficiency in itself, and the bone was only partially severed from its connections—as, for example, where a piece of bone was turned down from the forehead to make a new nose; 2, the second of these plans was well described as homoplasmic—that is, when the graft is taken from the same individual, but not from the same bone; 3, the third, or heteroplasmic, plan is applied to those cases in which a bone of some other individual or animal is made use of. The first and second plans were all but useless, and the third quite so—that is to say, the implanted bone could not ever grow. With regard to the question of excisions, it was, of course, a case for either movement or ankylosis. He had nothing to say, except that in the lower limb we must always have ankylosis, and in the upper movement, though an exception might, perhaps, be made in the case of the wrist, where a fixed or partially fixed joint would be more useful to the patient than a movable one.—*Brit. Med. Journal*.

SALT IN MILK FOR CHILDREN.—DR. A. JACOB (Arch. of Ped.) says that the addition of sodium chloride prevents the solid coagulation of milk by either rennet or gastric juice. The cow's milk ought never to be given without table salt, and the latter ought to be added to a woman's milk when it behaves like cow's milk in regard to solid curdling and consequent indigestibility. Habitual constipation of children is influenced beneficially, since not only is the food made more digestible, but the alimentary secretions, both serous and glandular, are made more effective by its presence.

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EMPHYEMA.

The impunity with which the peritoneum is subjected to operative interference depends not so much upon antiseptic methods as upon the germicidal action of the peritoneum itself. This action has been shown by RINNE¹ to be sufficient to remove, every few days, a few cubic centimetres of injected pus. The experience of operators also leads them to place the greatest reliance on the uninjured peritoneum to remove small amounts of infective material. Although the investigations of KNECHT² show that the healthy pleuræ of animals absorb with ease small amounts of pure cultures of pyogenic bacteria, the germicidal action of these surfaces is noticeably less than that of the peritoneum. The pericardium and the serous surfaces of the meninges offer almost no resistance at all to infection. This phenomenon the writer holds is due to an immunity acquired by the peritoneum through its proximity to infective material within the intestinal canal. The danger of the pleural cavities to infection is less, and therefore less resistance has been evolved, while the opportunity of the remaining serous cavities to infection is so small that their resistance is at a minimum.

Next to the peritoneal, then, the pleural cavities offer the greatest opportunity for, and the greatest hope in operative treatment. The history of empyema is one full of mournful disasters. Its diagnosis has often been delayed or mistaken. Usually secondary, it has been confounded with

every condition which it follows, and the unhappy patient has been allowed to die and be buried with a mistaken diagnosis. Phthisis (pulmonary tuberculosis) has not only had cases added to its mortality, but records some of its most remarkable recoveries through these errors, and mania and insanity have suddenly been cured by the evacuation of a suppurating pleura.

During the past half year, an unprecedented number of cases of suppurative pleuritis have been observed. In Cook County Hospital only two cases of empyema were treated in 1889, while during the first six months of 1890 fifteen cases were admitted with this diagnosis. Almost every practitioner could report a similar condition of things in his own private practice, and a careful examination will show that the influenza was the primary disease in the great majority of cases.

The origin of these empyemas may be set down something in this manner: General infection of the blood with influenza and consequent saturation of its germicidal quality; invasion of portions of the lung with pneumonia-producing parasites, and consequent interruption of the lymph-currents from the pulmonary pleura over the affected area, resulting in serous pleuritic effusion; invasion of the lymph spaces in the pneumonic area by pus-producing bacteria which advance from the larger to the smaller bronchioles to the lymphatics, and then are carried in the lymph in its abnormal course into the pleural cavity. Here the bacteria multiply in the effused serum until the pleural surfaces are so modified by the products of bacterial growth that absorption is arrested and these surfaces become one continuous pyogenic membrane.

Suppurative disease in the pleuræ is of the same destructive and progressive nature which is so well recognized elsewhere, and it should be attended with the same prompt and radical treatment. The peculiar contractile power of the lung which causes it to collapse as soon as the atmospheric pressure is admitted through a defect in the thoracic wall, has led to the surgical neglect of this region. However, the indications in cases of empyema are well defined: evacuation of the pus, arrest of the suppuration, and restoration of the function of the parts.

The early evacuation of the pus with the aspirator accomplishes the first and last indication temporarily; and, when continuous aspiration

¹Langenbeck's Arch. f. Klin. Chir., 1889.²Inaugural Dissertation, Greifswalde, 1889.

after the manner of BULAN is practiced, it meets all the indications better than any method yet proposed. But the patient requires constant trained attendants, and his intelligent and patient co-operation is necessary to success. The method, moreover, is inapplicable to cases of fibrinous or fibrino-purulent pleurisy, and it is liable to serious interruptions and accidents when successfully initiated. Nevertheless it is the only method that can be thought of in bilateral empyema, and in unilateral empyema with loss of function of the opposite lung from pneumonia or other cause. Even if it be followed by incision of the thoracic wall and open drainage, it may limit the cavity so that the lung will suffer trifling collapse.

For cases removed from the possibility of constant trained assistants,* the excision of a portion of rib and free drainage through the defect, is much to be preferred and it can be relied upon in most cases. Its application is so well understood that further mention is unnecessary. It is the only method which can be practiced in tubercular empyemas and in cases accompanied by permanent collapse or extensive gangrene of the lung, and in pneumo-pyo-thorax from perforation into a bronchus. It may frequently be necessary to supplement it in the worst of these cases with ESTLANDER'S operation.

Simple incision between the ribs can not be recommended as a safe procedure. It has been tried, with and without drainage tubes, for years, but with the most disastrous results. While it gives temporary relief, it offers, except in children, small hope of permanent recovery. Nevertheless, WM. E. QUINE has lately so modified this operation that it has in his hands given the greatest hope of usefulness. The incision is made into the center of the empyemic cavity at upper border of a rib. The pus is washed out once or twice daily with the most scrupulous antiseptic precautions. The thorough disinfection of the cavity is all the time kept in mind. When, after a week or ten days, more or less, the discharge becomes serous, the antiseptic irrigations are redoubled in amount and care for a few days, and then, after one grand attack on any remaining infection, the tube is removed and the incision stopped with a mass of iodoform, and the thoracic wound covered with an occlusive antiseptic dressing for two weeks. Under this treatment he has repeatedly had large tympanitic

thoracic cavities close in ten days, all the air being absorbed as well as any serous or purulent discharge, and what infective material the antiseptics have spared. The writer, on the suggestion of Prof. Quine, has practiced this method on a boy seven years old with the most happy results. A cavity holding at least three ounces, after daily antiseptic irrigation for two weeks, was permanently closed and the boy has remained well for three months. The writer believes that in proper cases and in proper hands this will be found a most satisfactory treatment. It must be instituted early. It must be conscientiously carried out until an approximately aseptic condition of the cavity is secured, or, better, until the absorptive power of the pleural surfaces is restored. Then the incision must be so closed that all ingress of air is prevented by the coaptation of the lips of the incision while the air within the cavity is absorbed, or forced out of the incision by coughing.

THE CRIME OF OVER-STATEMENT.

In the candid study of reported cases, there is apparent to the critical mind, an element of incredibility, which will not down at the bidding. We are ready to admit that this is not a constant factor, but merely that with all the hedging that it is quite frequent enough to deserve criticism. There is somehow an over-writing, a curious blending of the probable with a suggestive caution lest the tale be too well told. These are the arts of the shrewd writer, well up in the tricks of his craft. Parallel instances do not and are not expected to yield like results in other hands. Failure is to be attributed to lack of skill, knowledge or judgment.

Much may be allowed for the enthusiasm of the advocate of a new mode or principle, but there is altogether too much glossing and too much of the spirit of self-complacency to yield results of permanent value. This strife for immediate recognition, and this pushing to the front at all hazards, although for a season successful to the individual, only resolve themselves into examples of disaster to science at large. Men shake their heads and take refuge in a general disbelief, which stifles progress.

Now we hold that much more is to be learned from confessed errors of logic and mistakes in

diagnosis, than by any pandering to a personal vanity or assumption of infallibility. An unsuccessful issue, incapable of any avoidance in reality benefits more, when, conscientiously stated, than the most brilliant jumping at conclusions. We desire to give to this expression the utmost force, especially if the prevarication be deliberate. In all contributions to the medical press, the ideas involved may be worthy of perpetuation; then more is the pity if they be over-stated. What harm, therefore, if the foresight and ingenuity of other investigators bring to the task of unravelment a fresher mentality and more unprejudiced views. Any truth may be spoiled by too much drapery. Facts, in this our age, where BACON holds such a sway, can well afford to stand without propping. Facts, too, none of us need be told, are the known quantities in our mathematics, no less than in other departments of learning. HIPPOCRATES as an observer of the phenomena of disease will stand the test of ages yet to come; and DARWIN as a classifier of facts, will stimulate thought as long as the language in which he wrote is known. Why such enthronement? Why, because, in both the cardinal virtue was honesty.

In this, our writing, we are hinting at no delinquents in particular, but are disposed to denounce tendencies, customs and motives. Offenders are legion, and worst of all unconscious of their faults—they only know their neighbors, whom they would willingly punish. We admit that the temptations for a cheap acquirement of fame are various, that patience in classification is ignored, and that much latitude is given to fiction; but there can be no excuse for misleading the trusting by claims that are extravagant. We also allow that testimony is fallible, but cannot yield the point that falsehood, either deliberate or suggestive, can ever be utilized for any good. Let us have clear, succinct histories devoid of attempts at embellishment, and those artifices of concealment which mar rather than strengthen; let us not depend upon any one instrument of precision, nor let our vista be limited by any one field. When we become convinced of the more truthful methods of procedure, we shall come to comprehend broader laws, and to anticipate some of the grander discoveries, which may have been intended for reservation to posterity. Our moral is obvious, less self-appreciation but more labor for the general good.

GOVERNMENTAL INVESTIGATION REGARDING SPIRITUOUS LIQUORS.

An official enquiry by PROF. LYON PLAYFAIR'S committee on British and foreign spirits and their adulteration, at the laboratory of the Inland Revenue Department, has been made unusually interesting from the fact that one of the members, MR. HEALY, obtained specimens, from the House of Commons refreshment bar, of the Scotch and Irish whisky dealt out to the honorable members. The report of the analysis has not been published. But there has been published the evidence of DR. BELL, principal chemist at the laboratory above mentioned, regarding the brandy obtainable at the drinking places in London, to the effect that only four out of five were genuine, the other samples consisting of purified spirit flavored and colored. The mellowing of whisky, according to Dr. Bell, is a very uncertain element. He has seen a three-year old specimen which had lost none of its fusel oil, although generally speaking the time required in the mellowing process depends mainly on the amount of that oil present when the liquor is fresh from the still. Hence it is, as might be expected, that a great difference can be detected between the products of different distilleries. The chemical changes, which attend the mellowing of whisky, are not fully understood, although they are known to consist in part in the breaking up of fusel oil into aromatic ethers, but the same changes will certainly not always occur in different samples kept under conditions closely analogous. Dr. Bell states that he obtained fifty samples from the lowest public-houses in various British towns, and his analysis resulted in showing that the spirits were satisfactory in regard to purity, and that the injurious adulteration of alcoholic beverages is far less frequent than is commonly reported.

ELEMENT OF CONSENT IN SURGICAL OPERATIONS.

Apropos of a recent editorial in the *Medical Record* on "The Responsibility of the Physician for Experiments upon Patients, even with the latters' Consent," we are reminded of the exhaustive discussion upon "The Medico-Legal Relations of Abdominal Surgery" held in the Section on Jurisprudence at the last meeting of the American Medical Association. In that dis-

cussion, the necessity of obtaining the consent of the patient and friends, before proceeding to open the abdomen, was especially insisted upon by several speakers, and from this the discussion branched to the element of consent generally in surgical operations. The view most readily accepted in that meeting was that more than simple consent was required in surgical operations—while that was essential; the operation itself must be in the line of approved surgical procedure. A case was quoted in which a young man had his testicles removed because of amorous proclivities. He subsequently married and sued the physician for malpractice, notwithstanding the fact that the operation was undertaken with his full consent, indeed it was solicited. The case was settled out of court by the payment of a round sum on the part of the physician.

Responsibility in these cases is a complicated legal question. But we incline to the view that the mere element of consent is not sufficient to absolve the medical man from responsibility, unless the operation is within the recognized limits of medical or surgical procedure. It will not protect the physician in performing bizarre operations, or in reckless experimentation.

While we sympathize with the physician, mentioned by the *Record*, who was mulcted in small damages, we are not unmindful of the painful abscesses in the paralyzed limbs of the too credulous patient.

EDITORIAL NOTES.

PROF. SILAS H. DOUGLAS, M.D.—Dr. Douglas, says the *American Lancet*, died at his home in Ann Arbor, August 26, aged 74. He was for thirty-three years Professor of Chemistry in Michigan University. His genius organized the chemical laboratories of the University. For many years these had no equal in the United States. Much of the special value of the medical course was due to the exceptional advantages of these laboratories. Following Dr. Douglas Houghton in his occupancy of the Chair of Chemistry, he had the fullest opportunity to carry out his plans of teaching. He will doubtless be long remembered by his connection with the famous Douglas-Rose controversy, that kept at a white heat scientific, social, educational, and political interests of

the dominant power in the State. He was an exceptionally good business man for a doctor and a professor, and so was enabled to leave a large estate.

DEATH FROM POST-MORTEM ACCIDENT.—Dr. John Henry Love, formerly Health Officer at Wolverhampton, England, lost his life in consequence of an unusual accident in the post-mortem room. In the course of an autopsy he was engaged in opening the calvarium, when the hammer he was using slipped from the head of the chisel, and he received a sharp blow on the thumb of his left hand. The wound thus caused was immediately sucked and other treatment employed, but not sufficiently well to prevent septic infection, with cerebral symptoms, which resulted fatally three months after the accident. Perhaps the most important point of information to our readers, in this narration, may be in the fact that the lethal hammer-blow was given by one of those instruments that have one end of the head sharp and the other flat, and that in delivering the stroke the operator unfortunately had the sharp end towards the head of the chisel. Not unnaturally the hammer slipped, with the distressful results above described; all of which goes to show how life may hinge on a trifle of want of care and attention. In the post-mortem room, especially, these trifles must be rated as extra-hazardous.

THE MEDICAL EDUCATION OF WOMEN IN RUSSIA.—The reopening of the Woman's College of Medicine at St. Petersburg has been ordered by the Government. A building belonging to the municipality has been set apart for its temporary occupancy, and an annual grant amounting to about \$15,000 will be contributed by the city towards its support. The hospitals of the city will be accessible to the female students. The donations of private citizens will be relied upon, in considerable measure, to establish the college on a substantial basis. The college has already graduated not far from 700 lady physicians. The decision of the municipality to open the institution anew was brought about in consequence of a favorable report by Dr. Archangelsky, who has observed the good results of the work done by eleven female medical inspectors, employed by the city, to have oversight of the public schools and the *pauvres faubourgs* of St. Petersburg. Some of

these Russian ladies have found their way to Smyrna and other cities of the Orient, but far the greater number have remained in their own country, which suffers under a dearth of practitioners of medicine.

DR. FRIEDRICH ARNOLD, the eminent pathologist, died in Heidelberg on the 7th ult. No German professor is better known in America, nor one who has taught personally so many of the younger generation of medical men.

CHOLERA IN SPAIN; MALTREATMENT OF THE GOVERNMENTAL PHYSICIANS.—The strange behavior of the Spanish peasantry towards the medical men, who have been sent among them to save their lives, is like a page out of some mediæval chronicle. If the facts have been truly related to us by the cable despatches, not less than three cholera physicians have been killed by the mob, and many have been violently assaulted without cause. The health physicians have, in some places, refused to go on with their work unless protected by the military. Wherever they have gone, in the country districts, they have encountered the same wild panic-like antagonism, although their errand is plainly declared by them to be to save the lives of other people, at the risk and exposure of their own.

THE REPUTED CASE OF CHOLERA IN LONDON.—Great excitement prevailed in London recently following the announcement that a typical case of cholera had occurred in the person of a sailor landed at the Victoria Docks. On admission at the Poplar Hospital he was suffering marked collapse, cyanosis, cramps and violent vomiting. While these clinical symptoms point to Asiatic cholera, still the fact that there were no other cases during the voyage, and that no new cases are being developed, leads to the conclusion of his medical attendants, who have given the case every attention possible, that it is one of cholera nostras or cholera morbus, and not Asiatic cholera.

THE AUSTIN DISTRICT MEDICAL SOCIETY will hold its twelfth quarterly meeting at Austin, Texas, on Thursday, Sept. 25, 1890. A full programme of papers is published, and an interesting meeting of Texas physicians is assured.

THIRTY-TWO physicians of Bordeaux have volunteered for service at the frontier in preventing the spread of cholera.

CHOLERA.—The advices with reference to this disease during the current week have been favorable. Though prevalent in the provinces of Spain, the adjacent territories of France and Portugal are still exempt. It is less fatal in the localities previously infected, and in its progress westward it has been nearly at a stand. The report of a case in London proves to be ill-founded, and the advance to Western Europe by way of the Black Sea seems less and less probable. The heat of summer past, we may reasonably anticipate that for winter, at least, its general westward progress will be controlled.

PERSONAL UNCLEANLINESS AS A FACTOR IN THE CAUSATION OF CHOLERA.—In the *Gazette Médicale d'Orient* Dr. Gabuzzi cites Rochefontaine's experiments going to show that the microphyte of cholera is sterile within the patient's organism, and that, in order to be rendered capable of conveying the disease, it must find a nutritive soil on being cast off from the system. The urine, he thinks, often constitutes a medium in which it may attain pathogenic powers, and uncleanness, which favors the mixture of urine with the bacillus, may therefore be regarded as a predisposing cause of cholera.

CHOLERA IN JAPAN.—This disease has become prevalent in various parts of Japan, and it is quite possible that it may reach this continent by the western route rather than by the way of the Atlantic ports. Cases are reported in Tokio, and in Yokohama, the great center of commerce, a number of cases are reported.

PARIS is now receiving milk directly from the provinces, in sealed glass jars. This not only prevents contamination, but also fraud on the part of the retail dealer.

PROF. V. NUSSBAUM, of Munich, has, through ill health, been compelled to resign the position of director and professor at the University surgical clinic. Prof. Augerer has been intrusted with its provisional conduct.

SINCE 1866, 202 women have received diplomas in France, of whom 35 were doctors of medicine, 67 bachelors of letters, 69 bachelors of science, 13 licentiates, and 2 pharmacists.

In the rue Fessart, Paris, there has been established a house of refuge for women, modelled somewhat after the plan of industrial homes.

TOPICS OF THE WEEK.

PAST CONGRESSES.

The Berlin correspondent of the *British Medical Journal* prefaces his report of the late Medical Congress with the following brief references to the past Congresses:

"Before proceeding to give an account of the scientific and general work of the great medical gathering now being held at Berlin, it may be well to glance backwards for a moment at the similar meetings which have taken place in past years. The history of this important periodical event in the world of medicine is interesting as showing its almost casual mode of origin, and the way in which it has developed from comparatively humble beginnings into one of the most powerful factors in the advance of knowledge and the promotion of community of effort, professional solidarity, and good-will among the members of our body throughout the world. Although an international hygienic congress was held at Brussels so far back as 1852, the International Medical Congress, as we now know it, is of much more recent date. Our French neighbors claim the merit of having originated the idea, but the first meeting which was held at Paris in 1867 appears to have been little more than an accidental expansion of the annual Congress of French medical men, which was being held in the ordinary course, by the addition of a considerable foreign contingent formed by the medical visitors of various nationalities who had gone to Paris at the same time to see the great exhibition of that year. The scientific guests, who numbered about 500, were received by their French hosts with all the courtesy characteristic of the *grande nation*, and representative men of the different leading nationalities were chosen Vice-Presidents, among them, it is interesting to recall, being Professor Virchow, some of whose later utterances recently furnished Dr. Huchard with a text for a vehement call to all patriotic Frenchmen to boycott the Berlin Congress. The proceedings at the Paris Congress were almost purely scientific, with little or none of the festive element, which has been so prominent a feature in most of the subsequent gatherings. Moreover, French was the only language recognized at the meeting. The assembly, such as it was, however, was so successful that on the motion of an Italian physician, Dr. Pantaleoni, it was determined to make an International Medical Congress a regular institution, the meetings to be held every two years. In compliment to Dr. Pantaleoni, Italy was fixed upon as the place for the next meeting. It had at first been intended to hold the second Congress at Rome, but as there were some doubts as to the willingness of the Papal Government to furnish facilities for the meeting, Florence was chosen, and a gathering was held there in 1869, in which 87 foreign practitioners took part. Owing to the outbreak of the Franco-Prussian war, the third Congress was not held till 1873, when a successful meeting took place at Vienna, again contemporaneously with a Universal Exhibition. The veteran pathologist Rokitansky was the president on that occasion, which is memorable in the annals of medicine for the part assigned to discussions on important hygienic questions,

such as the prophylaxis of cholera, compulsory vaccination, etc. At Vienna, also, it was decided that at future meetings there should be three official languages, namely, German, French, and English. The fourth Congress was held at Brussels in 1875. The King of the Belgians took so much interest in the proceedings that he was present at many of the sittings. It was at this meeting that the Congress was first divided into Sections. The fifth gathering was at Geneva in 1877, under the presidency of the illustrious biologist, Karl Vogt; the sixth at Amsterdam in 1879, under the presidency of Donders, whose death ophthalmology and physiology will long continue to deplore. The next meeting, which was held in London in 1881, marks an epoch in the history of the Congress. Some 3,000 practitioners, including about 1,000 foreigners, took part in it. It was divided into sixteen Sections, which held 190 sittings, giving a total of 293 hours of work. The number of communications amounted to 325. The social aspects of the London Congress were not less brilliant than the amount and quality of its scientific work. Of the meetings at Copenhagen in 1884, and at Washington in 1887, it is needless to say anything more than that, though very successful, they did not eclipse the splendor of the London gathering."

LIGHT IN THE SICK ROOM.

Still a custom prevails despite all our sanitary teachings, that the occupant of the sick room in the private house should be kept at all hours in a darkened room.

Not one time in ten do we enter a sick room in the day time to find it blessed with the light of the sun. Almost invariably before we can get a look at the face of the patient, we are obliged to request that the blinds may be drawn up that the rays of a much greater healer than the most able physician can ever hope to be, may be admitted. Too often a compliance with this request reveals a condition of the room which, in a state of darkness, is invariably one of disorder everywhere; foods, medicine, furniture, bedding misplaced; dust and stray leavings in all directions.

In brief, there is nothing so bad as a dark sick room. It is as if the attendants were anticipating the death of the patient; and, if the reason for it be asked, the answer is as inconsistent as the act. The reason usually offered is that the patient cannot bear the light, as though the light could not be cut off from the patient by a curtain or screen, and as though to darken one part of the room it was necessary to darken the whole of it.

The real reason is an old superstitious practice which once prevailed so extensively that the sick, suffering from the most terrible diseases—small-pox, for instance—were shut up in darkness, their beds surrounded with red curtains during the whole of their illness. The red curtains are now pretty nearly given up, but the darkness is still accredited with some mysterious curative value.

A more injurious practice really could not be maintained than that of darkness in the sick room. It is not only that dirt and disorder are the results of darkness; a great remedy is lost. Sunshine is the remedy lost, and the loss is momentous. Sunshine diffused through a

room warms and clarifies the air. It has a direct influence on the minute organic poisons, a distinctive influence which is most precious, and it has a cheerful effect upon the mind. The sick should never be gloomy, and in the presence of the light the shadows of gloom fly away. Happily, the hospital ward, notwithstanding its many defects (and it has many), is so favored that it is blessed with the light of the sun whenever the sun shines. In private practice the same remedy ought to be extended to the patient of the household, and the first words of the physician or surgeon on entering the dark sick room should be the dying words of Goethe: "More light, more light!"—Dr. B. W. Richardson.—*Tenn. Health Bulletin*.

CHOLERA PROPHYLAXIS IN ITALY.

Among the nations of the Continent, Italy has hitherto been conspicuous for her belief in quarantine and sanitary cordons as the most effective means of averting cholera from her shores. And even now, when their efficacy has been shown, by her highest hygienic authorities, to be more than doubtful, she continues to favor them if only for the "sense of security" they give to her uninstructed populace. Concurrently, however, with these traditional, if not exploded, measures, she is developing activity in a far more promising direction—that is, in a vigilant censorship of the food-supply. For years past the meat, the vegetables, and the alcoholic beverages have been, in many large towns throughout the peninsula, sold to the poorer classes when in a state unfit for consumption; but, thanks to the new Sanitary Code, the public health officers have been most stringent in the exercise of the powers given them by that enactment for the confiscation of such articles, and the punishment of their vendors. How far the evil had been allowed to go may be inferred from the fact that one can hardly open an Italian newspaper without coming on one or more announcements of the sequestration of food or liquor stores, which, if permitted to be sold, must have injured the health of the consumer. The *Opinione*, for example, a leading Roman journal, tells us that in one fortnight the *Officio d'Igiene* has sequestered in that city 245,300 chilograms of fish, 1,742 of vegetables, 2,750 of fruit, and 32,700 of mushrooms, while the tradesmen in whose shops these articles were on sale have had their names and addresses published in the most conspicuous fashion possible. Similar seizures of confectionery and fancy beverages, such as are largely consumed throughout Italy in the summer season, are also reported in a Florentine journal—the *Nazione*—again with the names and addresses of the fraudulent vendors. All this should have a salutary effect on the Italian poorer classes, not only in view of cholera invasion, but of the maintenance of health at a high standard. In the memorable visitation of cholera in 1884, the ravages it made among the Neapolitan proletariat were distinctly traced not only to panic, but, primarily, to the unsound macaroni and the putrid vegetables, which made them "candidates" for the disease. Now this source of danger is in a fair way of being minimized—all the more that, as we see from an official rescript, the *personnel* of the sanitary office is

being rigidly supervised, so as to obviate the temptation not unknown in poor countries—of the enforcer of the law conniving, for a "consideration," at breaches of the same. Italy, indeed, is doing now what she should have done long ago, and will reap the reward, not only of keeping epidemics at bay, but of receiving a larger measure of that tourist population whom her backward hygienic system has hitherto tended to warn off.—*Lancet*.

THE INTERNATIONAL CONGRESS FROM AN ENGLISH STANDPOINT.

In a leading editorial in the *British Medical Journal* of August 16, there occurs the following reference to the recent Congress at Berlin:

"*Congressus haud impar*—Berlin has had to sustain the stress of a gathering of medical men of all nations, in numbers hitherto unprecedented. They invaded the metropolis of the German Empire in hosts from every part of the world. They came; they saw; and they admired. Nothing could have exceeded the overflowing hospitality, the generous and cordial welcome, the thoughtful courtesy, and the minutely elaborate preparations with which the social and scientific needs of the invading hosts were met. All were alike made to feel this welcome; so that whether for its remarkable assemblage of the most eminent representatives of cosmopolitan medical science, or for its endless round of scientific and social activity, the Berlin Congress must be pronounced to have far exceeded any which has preceded it; and it will certainly be difficult in the future for any capital to surpass the feat which Berlin has accomplished."

THE MEDICAL CHARITIES IN EDINBURGH.

A series of elaborate articles have appeared within the past week in the *Scotsman* on the Charities of Edinburgh. These are dealt with in great detail, and compared with similar reports published twenty-five years ago in the same paper. The charities first treated are the medical charities, and some of the results are sufficiently startling to be worth noting here. The sum annually spent in healing the sick in Edinburgh amounts to £45,000, irrespective of the sum paid for the support of the City Hospital for Infectious Diseases. The most startling result of the investigations upon which these articles are based is the number of persons who receive gratuitous medical advice from the city medical charities, the number reaching a total of rather over 103,000 persons, and this in a population a little over 236,000. The articles recommend that additional precautions should be taken to prevent persons availing themselves of such gratuitous help who are quite able to help themselves. At present the principle upon which most of the institutions are conducted is to help whoever presents himself, without asking any questions. And the writer fairly remarks that the temptation to abuse help so readily given is very great, and that it is not altogether wonderful that the numbers are large, especially when, owing to the amount of medical teaching done in Edinburgh, there is always a certain demand for patients. It is almost needless to state that this represents an enormous amount of gratuitous service by the profession.—*Lancet*.

PRACTICAL NOTES.

THE USE OF BUTTERMILK IN VOMITING.

Dr. Stanley M. Ward writes in the *Therapeutic Gazette* that he has found fresh buttermilk very serviceable in relieving vomiting of various forms, even at times the vomiting of pregnancy. The remedy is administered ice cold, in doses of about half a teaspoonful repeated every fifteen or twenty minutes. In the case of children with cholera infantum he has often succeeded in quieting the stomach by interdicting everything else and using a few drops of fresh ice-cold buttermilk at intervals varying in length according to the severity of the case.—*Medical Record*.

METHOD OF APPLYING ANTISEPSIS IN THE TREATMENT OF RECENT ANTERIOR URETHRITIS.

Dr. J. William White has obtained the best results in this disease by frequent injections with a large syringe of a solution of sulpho-carbolate of zinc (10 grains to the ounce of the mixture) in a 10 to 15 per cent. lotion of peroxide of hydrogen. In addition to this treatment, or often entirely omitting local treatment, six to eight capsules a day were given by the mouth, each containing:

Salol, $3\frac{1}{2}$ grains.
Oleoresin of cubeb, 5 grains.
Para balsam of copaiba, 10 grains.
Pepsin, 1 grain.

Of fifty-three cases of recent urethritis thus treated, and of all grades of severity, a distinct and unmistakable effect was produced upon the discharge in every instance but two, in which a violent indigestion prevented a thorough trial of the capsules. In about two-thirds of the whole number the discharge almost or entirely disappeared during the first week after treatment was begun. In but one case of the whole number did gonorrhoeal rheumatism develop. This was especially noteworthy in three cases which had never before been free from joint trouble during an attack of gonorrhoea.—*Medical News*.

LYSOL.

At a meeting of the Society of Physicians of Vienna, May 23, 1890, Dr. V. Gerlach spoke of a new disinfectant, lysol, derived from tar oils by boiling with alkalis and fats. Comparative tests as to the germicidal powers of lysol, carbolic acid, sulphurous acid, and creolin upon the spores of anthrax bacilli, the staphylococcus pyogenes, and cocci of erysipelas, showed the former to be possessed of special advantages. Lysol appears to be perfectly innocuous, and has been administered

subcutaneously to rabbits in amounts of half a drachm daily during fourteen days without causing death. It has been successfully employed in surgical operations, and for vaginal and uterine irrigation. On wounds it has no irritant effects, but when applied to mucous surfaces in $\frac{1}{2}$ per cent. solutions it causes slight transient burning. A 0.3 per cent. is sufficient to destroy all the organisms present in wounds within thirty seconds, and a 1 per cent. solution is a good general antiseptic. In 3 per cent. solutions, it has the properties of a soap, and acts as an excellent disinfectant of the hands.—*Wiener Medicinische Wochenschrift*, No. 22, 1890. *International Journal of Surgery*.

IODOFORM EMULSION IN THE TREATMENT OF COLD ABSCESSSES.

In the Polish Journal, *Gazeta Lekarska*, Dr. R. Jassinski reports the results he has obtained in the treatment of cold abscesses with iodoform emulsion. He opens an abscess only when it has become "residual," that is, when the primary focus in the vertebral column has healed or is separated from the abscess cavity. He has used iodoform emulsion in eighty-six cases, with the following results. A certain number of abscesses healed after a single injection, others after two or more injections. In eleven cases the abscesses burst spontaneously after injection, and much pus, mixed with emulsion, escaped. Healing occurred without further surgical interference. In nineteen cases aspiration was impossible, owing to blocking of the trochar; the opening was therefore dilated, and the cavity washed out with a 3 per cent. carbolic acid solution. Iodoform emulsion was then injected, and the wound stitched up. Occasionally a drainage tube had to be inserted, and the injection frequently repeated. Dr. Jassinski has never seen symptoms of poisoning, though he has injected 180 grams of a 10 per cent. iodoform emulsion at once.—*British Medical Journal*.

ANTIPYRIN IN ERYSIPELAS.

Dr. Favre, of Fribourg, relates an unusually severe case of erysipelas, showing the high curative value of antipyrin. A woman, aged 30, suffered from facial erysipelas accompanied by somnolence, vomiting, constipation and high fever. In spite of the local application of cold, carbolic acid, ichthyol, corrosive sublimate, strips of adhesive plaster, etc., the morbid process gradually spread over the scalp, neck, chest, upper extremities, abdomen and buttocks. On the tenth day the administration of antipyrin was commenced, with the result that fever at once markedly decreased, the patient's subjective state greatly improved, and the erysipelas soon ceased to spread.

SOCIETY PROCEEDINGS.

Tenth International Medical Congress,
Berlin, August, 1890.

DR. H. C. WOOD, of Philadelphia, delivered
before the Congress

AN ADDRESS ON ANÆSTHESIA.

(Concluded from page 376.)

Clinical and experimental results, namely, the results of experiments made in the physiological laboratory upon the lower animal, and the results of experiments made in the amphitheatre upon the higher animal, man—are again concordant. Chloroform is much more inimical than ether to animal life. The cause of this singular fatality is not, however, chiefly the cardiac action of chloroform. Chloroform is more apt to cause cardiac arrest than is ether, but it is also much more prone than is ether to cause death by failure of the respiration. Almost invariably, when ether is withdrawn before the dog is absolutely in the grasp of death, recovery occurs; but over and over again have I noticed that although the chloroform was taken away whilst the respirations were still being maintained with regularity, the arterial pressure much above zero, and the pulse very apparent, yet the symptoms of cardiac and respiratory failure continued to increase until the fatal issue was reached.

It seems to me that certain general facts or principles in regard to anæsthesia must be considered as established:

1. That the use of any anæsthetic is attended with an appreciable risk, and that no care will prevent an occasional loss of life.
2. That chloroform acts much more promptly and much more powerfully than ether, both upon the respiratory centres and the heart.
3. That the action of chloroform is much more persistent and permanent than that of ether.
4. That chloroform is capable of causing death either by primarily arresting the respiration, or by primarily stopping the heart, but that commonly both respiration and cardiac functions are abolished at about the same time.
5. That ether usually acts very much more powerfully upon the respiration than upon the circulation, but that occasionally, and especially when the heart is feeble, ether is capable of acting as a cardiac paralytant, and may produce death by cardiac arrest at a time when the respirations are fully maintained.
6. Chloroform kills, as near as can be made out, proportionately three to five times as frequently as does ether, partly, no doubt, because it is more powerful in depressing the heart, but largely because it lets go its hold much less rapidly than does ether when inhalation ceases. Is it not possible that this "holding on" is

because it is less volatile than ether, and can we not here get a hint why chloroform is less deadly in the South than in the North? The diffusibility of vapors or gases is in inverse proportion to the square of their densities, and the vapor of chloroform would certainly diffuse itself with far greater rapidity at 90° F. than at 70° F.

The comparative advantages and disadvantages of the two anæsthetics in practical medicine are so well known, that only one or two points seem to force themselves upon our present attention. I cannot see that the surgeon is justified in putting the life of the patient to unnecessary risk of chloroformisation, except under special circumstances. I believe, moreover, that much of the unpopularity of ether is due to its improper administration. It is so easy to embarrass the respiration seriously by the folded towel, as commonly used, that not only are the struggles of mechanical asphyxia almost invariably produced, but probably death itself sometimes caused. Especially is there danger of death being thus caused mechanically in the advanced stage of etherization, when the patient is too thoroughly etherized to struggle, and when the attention of the etherizer is, it may be, attracted by some novel and difficult operation. I confess myself to once having nearly killed a patient in this way.

A proper apparatus is certainly preferable to a folded towel. Various have been invented, but, as the time is short, I shall only mention one, which seems to me a practically perfect mechanism, although it is probably little known on this side of the Atlantic.

The inhaler invented by Dr. O. H. Allis is based upon the theory that the patient to be etherized should be supplied with a full abundance of air saturated with the vapor of ether. It consists essentially of a series of foldings of muslins on a wire framework, arranged almost like the gills of a fish, so as to allow the air to pass freely through, but everywhere come in contact with ether. It should be placed upon the face of the patient dry, and the ether gradually poured on from a bottle with a tight cork, pierced by two small glass tubes, one short for the entrance of the air, the other long, and reaching nearly to the bottom of the bottle for exit of ether. When properly used, the Allis inhaler practically does away with the sense of suffocation, and the consequent struggles which have made etherization alike so repulsive to patient and surgeon.

In order to determine the rapidity with which etherization can be produced by this inhaler, Dr. M. H. Wilson kept for me notes of thirteen consecutive cases in the clinic of the Jefferson Medical College Hospital in Philadelphia. The average time required for the production of complete unconsciousness was 8 minutes. The average time during which anæsthesia was fully

maintained was 32 minutes; and the average amount of ether used during this time was $7\frac{1}{2}$ ounces. In twenty-one surgical cases occurring this spring in the clinical service of Professor J. William White, of the University of Pennsylvania, the average time for the production of complete anæsthesia with ether, used through Allis's inhaler, was $7\frac{3}{4}$ minutes. The results arrived at in these two clinics are so close that 8 minutes must be considered as the average time required for full etherization by this apparatus.

In discussing the treatment of the accidents of anæsthesia, the results obtained at the bedside naturally press forward for careful consideration; but in going over the subject from this point of view, I have found so little that was novel, and so little that was satisfactory to myself, that I shall not occupy the time of this Congress with any conclusions drawn from reported cases, or personal experience in chloroform accidents. I do not think myself that the problem can be solved by any such study of cases. Death is so near and so terrible, time so absolute, moments so important, that no surgeon would be willing or justified in waiting for the effect of any one remedy; and when a man is dosed with alcohol, nitrite of amyl, hypodermic injections of ether, digitalis, atropine, and other powerful agents; faradised, slapped, douched, stood on his head, subjected to chest movements for artificial respiration, and various other measures too numerous to mention; who can tell, if by chance he recover, why he has done so? or who can point out, if by chance he die, what is the remedy whose omission or commission has led to the fatal result?

The problem is a very complex one, not to be worked out amidst the excitement and responsibilities of the amphitheatre. Only in the physiological laboratory can its various elements be separated and studied each by itself, without regard to the individual life which is at stake.

In the physiological laboratory two distinct paths open, each promising to lead to some positive knowledge. We may, on one hand, enter upon the study of the minimum fatal dose of the anæsthetic, and of the results by consentaneous or subsequent administration of its supposed physiological antagonist; or we may investigate the effect of remedies upon functions that are failing under the influences of the anæsthetic.

The objections to the first of these methods have been, in the present instance, overwhelming. The accidents seem to be independent of the amount of anæsthetic inhaled; and such a method of investigation would have required far more time than was available after I had had the honor of being asked to address this body. Death is produced by chloroform and ether through paralysis of the respiration and the heart, and the method of experimental study which I have employed consisted in a study of the action of power-

ful agents upon these functions when oppressed by chloroform. I have selected chloroform chiefly because it is the more powerful agent of the two anæsthetics, and the more certain in its lethal results.

The experiments have all been made upon dogs, by one plan. The carotid artery and also the trachea, having been connected with a recording drum, so that the movements of the circulation and the respiration could be consecutively recorded, the animal was anæsthetised, and when the blood pressure had fallen almost to zero, and the respiration had ceased, or nearly ceased, as the case might be, the remedy to be tried was injected into the jugular vein, through a canula which had been previously inserted.

The more important remedies which have been used by clinicians for the averting of threatened death during anæsthesia are ether, alcohol, ammonia, nitrite of amyl, digitalis, atropine, and caffeine, alterations of position, and artificial respiration.

Although, at least in America, hypodermic injections of ether have been frequently employed even in ether accidents, such use is so absolutely absurd that it does not seem to me to require any experimental evidence as to its futility. Ether in the blood acts as ether, whether it finds entrance through the lungs, through the rectum, or through the cellular tissue; and the man who would inject ether hypodermically into a patient who is dying from ether, should, to be logical, also saturate a sponge with the ether and crowd it upon his unfortunate victim.

Instead of simply stating the results obtained in my experiments, I have thought it would be more interesting to show reproductions from some of my tracings. The first drug that I shall report upon is caffeine. I have injected it during the cardiac failure produced by chloroform, in doses varying from 3 to $7\frac{1}{2}$ grs., and have never been able to perceive any distinct alteration in the arterial pressure, and no consistent distinct change of the pulse either in number or force. So far as the experiments go, they certainly indicate that the drug has no influence upon the heart that is being overpowered by chloroform. I may also state here, that it is not possible in any of my tracings to make out any influence exerted by caffeine upon the respiration.

With atropine, I have made a few experiments, the results being almost as negative as with caffeine. Ten cubic centimetres of a 2 per cent. solution of the atropine injected into the jugular vein of a chloroformed animal, altered the rate of the pulse beat, but had no apparent effect or influence upon the arterial pressure, or upon the respiration, and in no wise prevented final cardiac arrest.

Of all drugs, that which I think is most relied upon by clinicians as a cardiac stimulant in anæ-

thesia, as in other cases of heart failure, is alcohol. The chemical and physiological relations of alcohol to ether and chloroform are, however, so close, that many years ago I became very doubtful of the value of this drug as a stimulant to a heart depressed by anæsthesia.

These doubts continually grew stronger from what I saw and read as to the effects of the administration of alcohol during anæsthesia, and were finally changed into conviction by the experiments of R. Dubois,¹ who found that in the animal to which alcohol had been freely given, much less chloroform is required than in the normal animal, to anæsthetize or to kill; or, in other words, that alcohol intensifies the influence of chloroform and lessens the fatal dose.

In my own experiments with alcohol an 80 per cent. fluid was used, diluted with water. The amount injected into the jugular vein varied in the different experiments from 5 to 20 cubic centimetres, and in no case have I been able to detect any increase in the size of the pulse, or in the arterial pressure, produced by alcohol, when the heart was failing during advanced chloroform anæsthesia. On the other hand, on several occasions the larger amounts of alcohol apparently greatly increased the rapidity of the fall of the arterial pressure, and aided materially in extinguishing the pulse rate.

The effects of ammonia upon the failing heart of chloroform anæsthesia have been in my experiments uncertain; sometimes distinct, although very fugacious, and sometimes imperceptible. Twenty cubic centimetres of a 10 per cent. solution of aqua ammoniæ fortior (United States Pharmacopœia), in some instances produced an immediate rise in the arterial pressure, and even fugaciously registered itself in the respiratory rate, but perhaps more frequently it failed in its influence.

The influence of injections of digitalis has been in a number of experiments very pronounced in producing a persistent gradual rise of the arterial pressure, with an increase in the size of the individual pulse rate. In several instances death was apparently averted by its injection, and I saw in one or two cases, where large amounts of the digitalis had been employed, sudden systolic cardiac arrest, indicating that digitalis, in sufficient amount, is able to victoriously assert itself in opposition to chloroform. Moreover, when I have given chloroform to dogs whose hearts were already under the influence of digitalis, there has seemed to be a peculiar steadying or sustaining power combating the circulatory depression naturally produced by the anæsthetic, and I believe that in all cases of weak heart in man, a full dose of digitalis before the administration of chloroform would greatly lessen the danger of cardiac collapse.

With the nitrite of amyl four experiments were made; in some of these from 4 to 10 drops of the nitrite of amyl were injected in the jugular vein; in others the nitrite was used by inhalation. No distinct effect upon the arterial pressure was in any instance produced, and usually no alteration in the size of the pulse waves, although sometimes the pulse did appear to be a little fuller.

Of all my experimental results, those which have been reached with strychnine have been the most surprising. The injection of strychnine into the jugular vein usually produced a gradual rise of the arterial pressure, and always caused an extraordinary and rapid increase in the rate and extent of the respiration. Thus I have seen the respiration, which had practically ceased for ten seconds, suddenly, under the influence of an injection of $\frac{1}{16}$ of a gr. of strychnine, become at once very large and full, and reach a rate of 130 a minute.

A series of elaborate experiments made upon the effect of the change of position of the animal on the blood pressure in the carotid and other arteries, has very clearly proved that the body of the animal whose circulation has been paralyzed by chloroform acts in a measure like a tube filled with fluid. Thus, if the feet of the dog were raised vertically above the head, whilst the latter remained upon the table, an immediate rise of pressure occurred, even though the heart had ceased beating entirely; provided that the head of the animal was kept upon a level with the table. If, however, the head of the animal was depressed below the level of the table for a distance equal to, or greater than the length of the body of the animal, a decrease of the arterial pressure occurred at once, although the animal was in a vertical position. The phenomena observed were precisely such as would have been produced if the canula had been inserted into a tube filled with fluid, instead of the carotid artery, and the elevation and depression of this tube had registered itself on the recording drum, in obedience to the ordinary laws of hydrostatics. The phenomena were entirely independent of any beat of the heart, and were readily produced when the animal was dead, provided the death had not occurred too long previously. Sometimes, even a very few minutes after the cessation of the heart beat, it was impossible to produce the changes of pressure on the drum. This I believe to have been due to coagulation of the blood occurring very early after death to a sufficient extent to interfere with the liquid properties of the fluid. In no case was any effect upon the respiration produced by change of position in the animal. In a number of cases, however, when the feet were elevated, the heart, which had entirely ceased beating, recommenced its work, and I have several times seen a pulse entirely disappear when the animal was taken from the vertical to the

¹ Progrès Méd., 1883, xi, 951.

horizontal position. On the other hand, very frequently it was impossible to affect the cardiac action by changing the position of the animal. Nevertheless, the phenomena spoken of occurred too frequently to be a mere outcome of chance, though I several times noted that the heart was usually more affected by alternately elevating and depressing the feet of the animal than by keeping it in a steadily elevated or horizontal position.

When the circulation has practically ceased, under the depressing influence of an anæsthetic, inverting the body must cause the blood which has naturally collected in the enormously relaxed vessels of the abdomen, to flow into the right side of the heart and distend it, and this distension—this increase of pressure—appears at times to have a sufficient momentary influence to stimulate the failing organ.

The theory which has been advocated by some therapeutists—that inversion of the body is of value in the accidents of anæsthesia, because it causes the vital centres of the brain to be supplied with blood—is probably incorrect. The respiration in anæsthesia fails, not through want of blood in the respiratory centres, but because the blood contains a poison which paralyzes these centres.

The most remarkable results which I have reached in bringing about recovery of animals to all ordinary intents and purposes dead, were obtained through the use of artificial respiration. Thus, I have seen an animal, in which no respiratory movements whatever had taken place for two minutes, and in which, during that time, no movements of blood had occurred in the carotid artery, and in which, therefore, the heart had ceased its beat, rapidly and permanently restored by artificial respiration.

At one time in these researches, it appeared as though after any dose of chloroform by inhalation, the animal could be resuscitated by artificial respiration, even though heart and lungs were completely paralyzed by the drug; but finally I did find a case in which artificial respiration failed.

The results of my experiments with the lower animals may be summed up: that nitrite of amyl, caffeine and atropine are of little or no use in chloroform poisoning; that alcohol, when given in small amounts, has no influence, but that when given largely, materially assists in paralyzing the heart and producing fatal results; that ammonia has some little influence upon the heart, but that of all substances tried, digitalis was by far the most powerful in stimulating the failing circulation; indeed, my experimental results indicate that it is the only known drug which is of any real practical value in such cases. Next, or perhaps even before digitalis, strychnine seems to be of value in the accidents of anæsthesia, because, whilst having some influence on the circulation, it affects powerfully the respiration. For many years chloro-

form has been used in practical medicine as the physiological and practical antagonist to strychnine, and it seems rather odd that strychnine should never have been employed as the practical antagonist to chloroform.

The one measure which in practical value far surpassed all others for the restoration of the dying animal was artificial respiration, and I have no doubt that a great majority of the deaths which have occurred in man from anæsthesia might have been avoided by the use of an active artificial respiration. The difficulty with artificial respiration, as it has been hitherto practiced upon man, after the Sylvester or other methods, is its inefficiency; whereas the artificial respiration which I used on animals was very active, indeed, much more efficient than natural breathing in causing circulation of air through the lungs, and therefore in removing excess of the anæsthetic from the residual air of the lungs and from the blood.

The use of what may be called "forced" artificial respiration by the physiologist, so naturally suggested a similar practice in man, that the celebrated John Hunter invented for the purpose an apparatus which consisted of a bellows so constructed that when it was extended one compartment drew in air from the lungs, whilst the other drew air from the atmosphere; and when it was closed the process was reversed, the fresh air being thrown into the lungs, the foul air into the atmosphere. In 1867, Richardson, of London, invented an apparatus more elegant and portable, although indetical in principle with that of John Hunter's; but I have not found that either Hunter or Richardson treated by forced artificial respiration an actual case of disease or poisoning. In 1875,² Dr. John Ellis Blake reported a successful case of aconite poisoning, in which life was apparently saved, although there was no pulse for over three hours, by artificial respiration, with the use of oxygen. In this case Marshall Hall's method was at first used, but later, a small rubber tube was connected directly with a copper reservoir of condensed oxygen, the other end of the tube terminating in a small nozzle, which was inserted in one nostril. Four hundred gallons of oxygen were thus used, but how far the force of the compressed gas was employed to dilate the lungs is not very clear; and it is doubtful whether this case should be considered as one of forced respiration. The first physician to use forced respiration in actual human poisoning, with a clear idea of its value and power, so far as my reading goes, was Dr. George E. Fell.³

It is plain that the bellows constructed by John Hunter and by Richardson are unnecessarily complex and faulty in principle. There is no need whatever of drawing the air out of the fully-

² Boston Med. and Surg. Journal, vol. xxi.

³ International Medical Congress, Washington, 1887.

filled lungs. Every physiologist knows that when the muscular system is completely paralyzed by curare or even by death, the chest walls have sufficient elasticity to force air out of the lungs, and all ordinary laboratory apparatus for artificial respiration is based upon this fact. For forced artificial respiration in man, an ordinary bellows of proper size is all that is required for the motive power.

The real difficulty—the point to be especially investigated and studied—is as to the connection between the bellows and the lungs. Hunter and Richardson simply placed a tube in one nostril, closing firmly the other nostril and the mouth of the subject.

Dr. Fell at first used a tracheal tube, the insertion of which, of course, necessitated the performance of tracheotomy. In one case, however, a simple mask covering the mouth and nostrils was a perfect success. I have had no opportunity of trying the apparatus on the living, but have made a series of experiments upon dead bodies, which have demonstrated that usually a face mask is all that is necessary for the performance of artificial respiration. Before using the mask, the tongue should be well drawn forward, and, if necessary, fixed in this position by an ordinary piece of silk suture run through it, which can be held in the hand of the operator. If in any individual case the mask fails, an intubation tube may be introduced into the larynx. I do not believe it will ever be found necessary to perform a tracheotomy.

Dr. Fell's apparatus consists of a pair of foot-bellows by which air is forced into a receiving chamber, which is connected with an apparatus for warming the air, and a valve which can be opened and shut by a movement of the finger. This valve in turn leads to the tracheal tube. When the valve is opened the air rushes through the chamber into the lungs and expands them; the finger is lifted, the valve shuts, the lungs contract; and so the respiration goes on. I have no doubt that this apparatus is efficient in practice, but it is open to the serious objection of being unnecessarily complex and costly.

A much simpler, cheaper, and probably equally efficient apparatus may consist simply of a pair of bellows of proper size, a few feet of india-rubber tubing, a face mask, and two sizes of intubation tubes. There should also be set in the tubing a double tube, with opening similar to that commonly found in the tracheal canula of the physiological laboratory, so that it is in the power of the operator to allow for the escape of any excess of air thrown by the bellows. This whole apparatus can be prepared at a very trifling expense, and it seems hardly necessary to point out its probable value in various narcotic poisonings, and other accidents, in which death is produced by a paralysis of the respiratory centres of

temporary nature. The proper use of it—at least with the face mask—could be taught to persons without special medical skill, so that it not only ought to form a part of the surgeon's outfit, but might be of great service in life-saving stations, about gas works, etc.

In conclusion, I may be allowed to state that if the results and deductions arrived at in this address are, as I believe, correct, the rules for the proper treatment of accidents during anaesthesia can be summed up in a very few words:

Avoid the use of all drugs, except strychnine, digitalis, and ammonia.

Give the tincture of digitalis hypodermically.

Draw out the tongue, and raise up the angle of the jaw, and see that the respiration is not mechanically impeded.

Invert the patient briefly and temporarily.

Use forced artificial respiration promptly, and in protracted cases employ external warmth and stimulation of the surface by the dry electric brush, etc., and, above all, remember that some at least, and probably many, of the deaths which have been set down as due to chloroform and ether have been produced by the alcohol which has been given for the relief of the patient.

DOMESTIC CORRESPONDENCE.

The New York State Examining Board.

To the Editor:—Dr. William Warren Potter—who gives his own name and address so fully that it is unnecessary for me to reciprocate the favor which he does me in that respect—apparently misapprehends both the intention of my criticism and the provisions of the Act which he defends, inasmuch as he confines the principal part of his argument to the function of the State Medical Society in "nominating to the Regents of the University one of the boards of medical examiners to be created," whereas my objection concerned the decree that this board shall be "composed exclusively of members of the same medical society."

I am aware of the distinction which Dr. Potter so clearly draws between "members" and "delegates" (although he subsequently confuses them altogether as members), and I am also aware that eligibility to membership is a very different thing from membership, as but two per annum out of the many "eligibles" could be elected until recently. Accepting Dr. Potter's statement that there are now 229 members, the Act declares that from what I must still call "a small circle" must be "exclusively" appointed the examining board to represent the regular medical profession.

Furthermore, I entertain strong doubt of the safety of the assertion that a quorum of members

and delegates can be trusted to speak for a constituency of "upwards of 4,000 physicians." They certainly did not so speak when, in 1882, without preliminary warning to the profession, fifty-two of them enacted a "new code" of ethics, cutting the society loose from the national Association, with the result of eliciting protests from forty out of the sixty county societies. They were not so speaking in 1884, when, out of 5,002 physicians, but 1,040 expressed themselves in favor of this "new code." Nor are they more entitled so to speak to-day.

THE JOURNAL'S "editorial commendation" was, I suspect, misapplied to the society in question by a *lapsus pennæ*, and intended for the New York State Medical Association, founded for the maintenance of the national code of ethics, since its "plan of organization" alone provides the system of district branches which was commended.

ALFRED L. CARROLL.

30 West 59th street, New York.

NECROLOGY.

J. W. Heron, M.D.

Dr. J. W. Heron, a medical missionary and superintendent of the Royal Hospital of Korea, died at Seoul, the capital of that country, on July 31, of dysentery. Dr. Heron is said to have enjoyed, in a peculiar degree, the confidence of the king and of the foreign colony.

MISCELLANY.

INSANITY IN ENGLAND.—The report of the English commissioners in lunacy states that the total number of lunatics, idiots, and persons of unsound mind under official cognizance in England and Wales on January 1st last was 86,067, being an increase of 1,727 as compared with January 1, 1889.

LETTERS RECEIVED.

Dr. John Casson, Alexia, La.; Julia H. Murphy, Mercer, Pa.; Dr. W. M. Lewis, Greensburg, Ky.; Dr. W. C. Townes, Chattanooga, Tenn.; Miner & Elbreg, Indianapolis; Dr. G. F. Cook, Oxford, O.; Dr. H. Durand, Paris, France; Dr. C. G. Cannaday, Roanoke City, Va.; Dr. W. F. Rochelle, Jackson, Tenn.; Dr. Edw. A. Sawyer, Gardner, Mass.; Dr. A. F. Walter, Gladbrook, Ia.; Dr. J. C. Lange, Pittsburgh, Pa.; Dr. T. G. Horn, Colorado Springs, Col.; W. D. Kline, Nashville, Tenn.; Dr. Chas. H. Shepard, Brooklyn, N. Y.; J. F. Madden, New York; Dr. R. S. Brice, Keota, Ia.; Dr. E. Pynchon, R. G. Dun & Co., Chicago; Dr. John P. Stoddard, Muskegon, Mich.; Miss Kennedy, Allegheny, Pa.; Jas. Black, Denver, Col.; Dr. Bullard, Columbus, Ga.; Dr. J. G. Meachem, Racine, Wis.; Lea Bros. & Co., Philadelphia; Dr. W. S. Watson, Matteawan, N. Y.; Dr. C. A. Eastman, Winthrop, Mass.; Dr. J. B. Mattison, Brooklyn, N. Y.; The Mutual Life Ins. Co., New York; Canton Surgical and Dental Chair Co., Canton, O.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from August 30, 1890, to September 5, 1890.

First Lieut. Theodore F. DeWitt, Asst. Surgeon U. S. A., is granted leave of absence for one month, to take effect September 15, 1890. S. O. 76, Hdqrs. Dept. of Texas, San Antonio, Tex., September 1, 1890.

APPOINTMENT.

Col. Jedediah H. Baxter, Chief Medical Purveyor, to be Surgeon-General, with the rank of Brigadier-General, August 16, 1890. Vice Moore, retired from active service. A. G. O., Hdqrs. of the Army, Washington, September 1, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 6, 1890.

Surgeon J. C. Wise, detached from Torpedo Station, and to the U. S. S. "Alliance."

Surgeon Paul Fitzsimons, ordered to the Torpedo Station, Newport, R. I.

Surgeon George A. Bright, detached from the U. S. S. "Constellation," and to Naval Academy.

Asst. Surgeon F. W. Olcott, promoted to be P. A. Surgeon, U. S. Navy.

P. A. Surgeon A. R. Wentworth requests to withdraw resignation—granted.

P. A. Surgeon M. H. Crawford, detached from the U. S. S. "Monongahela" and granted two months' leave of absence.

Asst. Surgeon James F. Keeney, detached from the U. S. S. "Richmond," and granted two months' leave of absence.

Asst. Surgeon Chas. H. T. Lowndes, detached from Naval Academy, and ordered to the U. S. S. "Richmond."

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending July 5, 1890.

Surgeon W. H. H. Hutton, ordered to Washington, D. C., for special duty. June 23, 1890.

Surgeon W. H. Long, granted leave of absence for thirty days. July 2, 1890.

Surgeon H. W. Austin, when relieved at Chicago, Ill., to report in person to the Supervising Surgeon-General. July 5, 1890.

Surgeon Fairfax Irwin, to proceed to Biloxi, Miss., on special duty. July 2, 1890.

Surgeon F. W. Mead, relieved from duty at St. Louis, Mo., to assume command of the Service at Chicago, Ill. July 5, 1890.

P. A. Surgeon S. T. Armstrong, granted leave of absence until August 7, 1890. June 24, 1890.

P. A. Surgeon P. C. Kalloch, relieved from duty at San Francisco, Cal., to assume command of the Service at St. Louis, Mo. July 5, 1890.

Asst. Surgeon T. B. Perry, granted leave of absence for ten days. July 2, 1890. Upon expiration of leave, to proceed to Norfolk, Va., for temporary duty. July 5, 1890.

Asst. Surgeon J. O. Cobb, to proceed to St. Louis, Mo., for temporary duty. July 5, 1890.

Asst. Surgeon B. W. Brown, to proceed to San Francisco, Cal., for temporary duty. June 23, 1890.

RESIGNATION.

P. A. Surgeon S. T. Armstrong, resignation accepted, by direction of the President, to take effect August 7, 1890. June 24, 1890.

APPOINTMENT.

Asst. Surgeon B. W. Brown, commissioned as an Asst. Surgeon by the President. June 23, 1890.

OMITTED FROM PREVIOUS LIST.

Surgeon P. H. Bailhache, to proceed to Eureka, Cal., and Astoria, Ore., as inspector. June 5, 1890.

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No. 12.

ORIGINAL ARTICLES.

FISTULOUS ESCAPE OF LIGATURES AFTER PELVIC OPERATIONS.

*Read in the Section of Obstetrics and Diseases of Women at the
Forty-first Annual Meeting of the American Medical As-
sociation, held in Nashville, Tenn., May, 1890.*

BY MARIE B. WERNER, M.D.,
OF PHILADELPHIA.

As the science of abdominal surgery advances, we feel it is not a report of successful operations alone that establishes a reputation, but the number of absolute cures makes the successful surgeon.

Since the days of Listerism, when Lister first laid down the rules for antiseptics, which in turn gave birth to the crowning aid to surgery, thorough asepsis, the rate of mortality has diminished in a remarkable manner.

The number of abdominal sections for various lesions increased, and with the number of recoveries the dread for such surgery was diminished. Those earnestly engaged in effecting lasting cures, soon began to see that it was not always recovery from an operation which meant a cure. The patient was not safely landed; fistulæ, secondary adhesions, painful stumps, or unfinished operations, marked the shoals upon which the hopes for an entire recovery might be wrecked; like the successful navigator, it becomes our duty to study these shoals in detail, and, if possible, place the danger signal conspicuously in our minds, in order to be able to avoid a second exposure to similar dangers.

The most successful operations reported, prove that aseptic, rapid work, with as few instruments and sponges as possible; a clean, good stump; light ligatures, applied closely to the uterus, cut ends, short, thorough irrigation avoid many of these complications. If much oozing from torn adhesions, or if pus is present, the drainage tube becomes a valuable aid, provided it is properly cared for (cleaned at intervals of twenty or thirty minutes with syringe, and removed as soon as the effusion becomes serous and less than a drachm).

Last, but not least, comes the importance of including the muscle and fascia in closing the abdomen. The fact that various gynecological societies have taken up the discussion of the be-

havior of ligatures after the removal of diseased uterine appendages induces me to place on record two cases, the first my own, the second, one who subsequently placed herself under my care three months after operation.

Knowing full well there must always be a cause for unexpected happenings, I was anxious to satisfy myself in these cases, and think I succeeded.

Case 1.—Operation in March, 1887. Right ovarian cyst; cyst walls friable, adhesions, ligature Chinese twisted silk, medium size, Staffordshire knot, drainage five days; recovery good. With the exception of an occasional pain in the region of the stump, patient was well and attended to her household duties. Fifteen months later, however, the patient brought the ligature, claiming to have discharged it from the urethra after much tenesmus at micturition; giving a history of much pain previous on right side over the bladder, and frequent desire to urinate. Examination showed slight tenderness of stump and a tendinous cord leading to bladder. After a few weeks all tenderness gone, patient well.

Case 2.—Operation in May, 1887, by Dr. R. S. Hunt. I was present at the operation; cyst of broad ligament on left side. Ligature braided silk, No. 9, Staffordshire knot, no drainage. Aside from several stitch abscesses, recovery good, patient up in four weeks. During latter part of August of same year, patient experienced great pain in scar, shooting down toward the right side. A small abscess formed in the scar, was lanced, washed, probed and found to extend down toward the stump. In about two weeks the ligature was expelled and in a short time all had healed.

Case 1 presents two factors, each of which may account for the discharge of the ligature: First, the friable condition of the cyst wall, part of which helped to make stump, the want of vitality of surrounding tissues, failing to encapsulate or absorb the ligature; second, the length of time the drainage tube was left *in situ*, owing to my inexperience regarding their use, this being my first drainage case. I left it in long enough to become an irritant and had some difficulty in healing the track (three weeks).

Case 2 was undoubtedly due to the size of the ligature, the tumor being small and the pedicle short in consequence, allowed the ligature to slip

over the button the moment shrinkage of the stump took place.

In connection with this subject, I have endeavored to collect as many cases as possible, with a brief history of each. It is only by concentrating our forces that we are able to win the battle, hence the study of cause and effect becomes most necessary.

Dr. Thomas Keith, in his little book on "Contributions to the Surgical Treatment of Tumors of the Abdomen," relates his experience with catgut ligatures, (on page 17) he says: "Twice I have had hæmorrhage happen in ovariectomy, and on both occasions catgut ligatures were used, in one some thick catgut ligatures had been used to a very thick omentum. Several of the knots came away through the wound, and after weeks of horrible suffering from cystitis, a thick knot of catgut, with the loop but little absorbed, was passed by the urethra."

Dr. Matthew D. Mann tells us in his report of 160 abdominal sections (*Buffalo Medical and Surgical Journal*, April, 1890), that the causes of fistulæ are either an abscess in the pelvis from some foreign substance, or the use of the drainage tube, and cites an experience in which a fistula resisted all attempts at healing for four years; he feels confident that it is due to a silk ligature. This induced him to try catgut, which proved more satisfactory—indeed, he feels so secure about its harmlessness, that he was comparatively at ease when he found a fistula and discharge of pus follow the use of the drainage tube, feeling sure there was no infected silk at the bottom of the sinus. Later, two knots of catgut came out of this sinus, after which it readily closed.

In a communication from Dr. H. A. Kelly he writes the following: "I have had a number of cases in which the ligatures have all been cast off through the abdominal walls, except one case of hydrosalpinx and ovarian tumor, in which the patient afterward had cellulitis. This suppurated and was drained through the vagina and the ligature discharged. It has frequently happened in cases of pyosalpinx, where long continued drainage was necessary. I have observed it very constantly in cases in which the pyosalpinx has already ruptured, or been on the point of rupturing into the bowel, these cases always requiring prolonged drainage.

"Ligatures of twisted silk, figure of eight doubled, were used. These have been cast off from two or three months to a year after operation. I never use heavy strands of gut, as there is considerable doubt as to our ability to disinfect them satisfactorily. In all cases there has been drainage for four or five days. I clean the tube at intervals not longer than twelve hours. No sort of antiseptic injections are ever used in any of my abdominal sections."

Dr. Kelly's remark regarding the use of heavy strands of catgut seems of importance. We are never sure of healthy membrane, hence, in spite of antiseptic precautions we may often use septic gut. Dr. Matthew D. Mann's statement that gut shrinks one-tenth its length when wet with water, requires some consideration in tying, since too much pressure may cause some necrosis of stump.

The causes of fistulæ can be summarized as follows: Adhesion to the bowel may, in being loosened, cause thinning and subsequent sloughing. Heavy ligatures on small stump. Ends of ligature left too long. Ligature not thoroughly aseptic. Part of stump consisting of unhealthy tissue. Prolonged use of the drainage tube may set up localized inflammation, resulting in abscess of stump, or surrounding tissue.

Drainage, however, seems too valuable an aid to discard lightly, for we may meet with just as serious difficulties in closing up the abdomen where there is danger of oozing, which may accumulate and decompose, giving rise to troublesome secondary symptoms:

Among the secondary adhesions most commonly found, may be mentioned omental and intestinal with the stump or abdominal incision as a focus. Such a case was reported by E. Sinclair Stevenson before the British Gynecological Society, April 24, 1889, in which intestinal obstruction called for a second operation. The omentum was found twisted like a loose rope, dipping into the abdominal cavity, glued to coils of intestine, its extremity firmly attached to a coil deeply seated. The importance of careful inspection regarding torn surfaces of omentum or peritoneum, and obviating adhesions by stitch or removal, spreading out the omentum toward the left just before tying the abdominal sutures, becomes at once manifest.

Omentum caught in the holes of the drainage tube, is another unpleasant complication, but can be avoided by using the tubes of small calibre with small perforations, as advocated by Dr. Joseph Price.

Intestinal adhesions to stumps or open surfaces left from torn adhesions, are best overcome by free purgation and the avoidance of opium.

Painful stumps may be due to an uncovered ligature, to unhealthy tissue left in stump, or, as Dr. B. C. Hirsch has shown us, by too much ligature, added to an unfinished operation. This brings us to the last point of importance: Under this head I have had an unpleasant experience with two cases some years ago; and have profited by it. One case in particular, in which a pus tube was so tightly adherent to the uterus and pelvic walls that my courage failed me and, contenting myself with one side removal, I closed the abdomen, only to see my patient three months later with a sharp attack of septic peritonitis, and

TABLE OF CASES.

OPERATOR.	OPERATION.	LIGATURE.	DRAINAGE.	REMARKS.	HISTORY OF FISTULÆ.
Dr. Ashton. <i>Annals of Gynecology</i> , April, 1890.	January, 1888, abscess of right ovary and tube.	.....	Yes.	Track of drainage tube did not close. In finding one ligature, after flushing out the abdomen; no drainage; yet a fistula resulted, necessitating a third operation in Feb., 1889, with complete closure; the following August, however, the fistula reopened and discharged a ligature.	October, 1888, a second section resulted in finding one ligature, after flushing out the abdomen; no drainage; yet a fistula resulted, necessitating a third operation in Feb., 1889, with complete closure; the following August, however, the fistula reopened and discharged a ligature.
Dr. B. F. Baer. (Personal com.)	Ovariectomy.	Chinese twisted silk, figure of 8.	Two days, tube cleansed with syringe every half hour.	Intraligamentary adhesions to descending colon and small intestine.	Fæcal fistula caused by sloughing of bowel and drainage tube; ligature came away two weeks after operation.
Dr. J. M. Baldy. (Personal com.)	Extra-uterine pregnancy. Local peritonitis.	Twisted silk, figure of 8.	8 to 12 days, tube cleansed with syringe every hour.	General adhesions; beginning gangrene of sac.	Fistula at site of drainage tube; ligature came away in 13 weeks; healed spontaneously.
Dr. H. Beates, Jr. (Personal com.)	Salpingitis.	Twisted silk No. 3. Staffordshire knot.	1 to 2 days, injections of bichloride 1-10000, cotton capillary dressing.	General adhesions.	Fistula at site of drainage tube; ligature came away in 12 weeks; healed.
Dr. B. B. B. (Personal com.)	Pyosalpinx.	Same as above.	Same as above.	General adhesions; patient in bed five weeks.	Fistula; ligature came away in 11 weeks; healed.
Dr. B. B. B. (Personal com.)	Pyosalpinx.	Same as above.	Same as above.	General adhesions; patient in bed five weeks.	Ligature came away in 14 months.
Dr. B. B. B. (Personal com.)	Ovariectomy. Multilocular cysts.	Same as above.	Same as above.	No complications.	Ligature expelled through abdominal fistula in 10 weeks.
Dr. Wm. Goodell reports to the Philadelphia Obstetrical Society, March 7, 1889, the following three cases.	Removal of intraligamentary cyst.	.....	.....	Compelled to reopen wound for bleeding, 5 days after a fistula resulted.	1½ years since operation; fistula still remains; the only annoyance to the patient is an escape of gas.
Dr. B. C. Hirst. (Personal com.) Two cases.	Pelvic abscess. ....	.....	Prolonged.	A counter-opening may yet be necessary per vaginam.	Fistula caused by the prolonged use of the drainage tube.
Dr. B. C. Hirst. (Personal com.) Two cases.	Recurrent intraligamentary cyst lying in a large abscess cavity.	.....	Yes.	Fistula resulted from a previous operation in which a clamp had been used many years ago.	Fistula still present at time of report; was then trying to heal with iodine applications along the entire tract.
Dr. B. C. Hirst. (Personal com.) Two cases.	Pyosalpinx.	Twisted silk, figure of 8.	No.	Patient was easily managed, out of bed 3 weeks. Excessive hemorrhage necessitated passing two strong ligatures at base of R. broad ligament. The ligatures were not surrounded by lymph accessible to sight and touch; pain which had followed previous operation disappeared after removal.	Fistula of a year's standing; after discharge of ligature fistula healed.
Dr. John B. Deaver. (Personal com.) Two cases.	Double pyosalpinx.	Twisted silk, figure of 8.	Yes.	Many adhesions.	Fistula at site of tube track; ligature expelled 4 weeks after operation.
Dr. John B. Deaver. (Personal com.) Two cases.	Ovariectomy for large multilocular purulent cyst.	.....	Yes.	Patient had been tapped a number of times, making dense adhesions.	Fistula in tube track; ligature expelled 6 weeks after operation.
Dr. Hannah T. Crossdale. (Personal com.)	Removal of a tube and ovary. Local peritonitis.	Cable twist No. 3, Staffordshire knot.	Eight hours.	Extensive adhesions prevented removal of appendages of other side.	Patient in bed from Jan. 2 to Feb. 9; ligature discharged Jan. 31; rapid improvement; wound healed Feb. 4.
Dr. Joseph Hoffman. One case from his own practice, the other under observation. (Pers'l com.)	Pyosalpinx.	Chinese silk twist No. 3, figure of 8.	Tube cleansed with syringe at short intervals.	General intestinal adhesions. Local peritonitis.	Ligature discharged in about 3 months; patient remained in bed 6 weeks.
Dr. H. A. Kelley. Reported in the <i>British Gynecol. Soc.</i> by T. B. Jessett, Oct. 23, 1889.	Left ovarian dermoid cyst.	Same as above.	Yes.	General intestinal adhesions; general peritonitis; pus.	Ligature discharged in about 3 months; patient in bed 2 months.
Dr. D. Longaker. (Personal com.)	Hydrosalpinx, puerperal. Local peritonitis.	Platted silk, medium size, figure of 8.	36 hours.	Dr. Kelly reports that "in her convalescence she had a large hæmatocèle, ante-uterine, which is slowly undergoing contraction."	Mr. T. B. Jessett finds, 5 mos. after operation, an abscess in the anterior wall of vagina; opens drains, and finds a Chinese silk double ligature; negative history regarding rigors or high temp.
Dr. D. Longaker. (Personal com.)	Hydrosalpinx, puerperal. Local peritonitis.	Platted silk, medium size, figure of 8.	36 hours.	Extensive adhesions; sinus following drainage track.	After a few months one ligature, at end of sixth month the second came away; fistula failed to heal for one year; was finally curetted and injected with nitrate of silver; healed.

OPERATOR.	OPERATION.	LIGATURE.	DRAINAGE.	REMARKS.	HISTORY OF FISTULÆ.
Dr. Charles D. Penrose. (Personal com.)	.....	Twisted silk No. 3, figure of 8.	.....	.....	Dr. P. has had two cases in which a sinus lasted several months, one due to syphilis, the other to tuberculosis; never has had a case of discharged ligatures in abdominal sections.
Dr. W. H. Parrish. Case 1. (Personal com.)	Double ovariectomy.	Black silk, fig. of 8 of one side, shoemaker's knot the other.	No.	Both ovaries cancerous, one presenting a large tumor of about 20 lbs., the other the size of a large orange; general condition poor.	Fistula; two months later shoemaker's ligature discharged and fistula closed spontaneously.
Dr. W. H. Parrish. Case 2. (Personal com.)	Removal of appendages on both sides.	Rather large Chinese ligature, fig. of 8.	Yes.	Syphilitic colored woman, confirmed drunkard, unruly; walked across ward second day, glass in situ; fistulous opening in lower angle of wound.	Nine mos. after operation removed one ligature with hooked end of small probe; subsequently a counter-opening was made per vaginam, by another gentleman; no avail; later, laparotomy by a third resulted in death.
Dr. Charles M. Wilson. (Personal com.)	Ruptured ectopic gestation of six months.	Staffordshire knot. ....	.....	.....	Six mos. later one of the ligatures ulcerated its way out through the abdominal cicatrix.
Dr. H. M. Weeks. (Personal com.)	Extra-uterine pregnancy, Nov., 1888.	Twisted silk No. 3, figure of 8.	Prolonged; tube cleansed by irrig'n with the long syringe; distilled water.	.....	Ligatures came away 5 months after operation.
Dr. H. T. Hanks. Reports N. Y. Obstetrical Society, Jan. 7, 1890.	Ruptured extra-uterine pregnancy.	.....	Yes. Irrigation twice daily.	The R. broad ligament through which the large hæmatocele had ruptured was very friable, and the suture had a strong tendency to cut through.	Ten days after operation two ligatures were removed from the sinus; patient made a good recovery.

die five months after; her abdomen literally filled with multiple abscesses. The second unfinished case was of a similar nature, though not so far advanced; the adhesions again intimidated me; patient recovered promptly, in spite of hot July weather, was temporarily relieved. The following winter I was called in to treat a localized peritonitis on the side where I had left the pus tube. She recovered, but has since passed out of my hands. I have learned that to open an abdomen and leave pus there is productive of as much censure as to know of its presence and not attempt its removal; and have since endeavored to remove the cause of sepsis even though the ideal operation was out of the question, and the results have been more satisfactory.

This leads me to an important question which has agitated my mind of late, and which is best illustrated by a brief account of two cases from my practice, both unilateral hydrosalpinx. In both I removed the affected tube and ovary—one in March, 1887, the other in February, 1888; the remaining appendages apparently normal. Both recovered promptly and improved in health. Former symptoms returned to the other side—Case 1 in eighteen months; Case 2 in six months.

Case 1.—Reported three months ago. Found painful mass on right side; when told she made preparations at once for a second operation. Operation March, 1890. Some omental adhesions to incision, tube and ovary adherent, cystic, left stump was healthy. Patient recovered promptly, now seven weeks since operation; no pelvic pains, intestinal functions normal.

Case 2.—Operation May 9, 1890. Omental adhesions to abdominal wall. Intestinal adhesions to the stump, uterus and abdominal wall; ovary and tube adherent; decided constrictions of tube near ostium internum. Removed tube and cystic ovary; separated all adhesions except those to the stump, fearing more grave complications. May 18, patient doing well.

This leads to the question: Is it the proper course, to remove an apparently normal ovary and tube when there is hydrosalpinx on one side, or shall we let the patient run the risk of a possible second operation?

Is there the same danger as in pyosalpinx? Should this last question receive an affirmative answer, it certainly behooves us to explain such dangers fully to the patient and gain her consent to remove, if necessary, even an apparently healthy-looking ovary and tube; so she may not be exposed to the dangers of a second operation.

1010 Clinton Street.

IN China eight varieties of leprosy are recognized, and the disease is considered contagious, infectious and hereditary, but is said to disappear in four generations. There are leper villages, to which all suffering from the disease are sent.

FACIAL AND THORACIC DEFORMITIES INCIDENT TO OBSTRUCTION BY ADENOID HYPERTROPHY IN THE NASO-PHARYNX.

Read by Title in the Section of Practice of Medicine, Materia Medica and Physiology, at the Forty-first Annual Meeting of the American Medical Association, May, 1890.

BY W. E. CASSELBERRY, M.D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, AND OF LARYNGOLOGY AND RHINOLOGY, IN THE CHICAGO MEDICAL COLLEGE.

The disease which occasions the particular form of obstruction, prone to result in the series of deformities about to be described, is variously known as "adenoid hypertrophy in the naso-pharynx," "adenoid vegetations" and "hypertrophic naso-pharyngitis;" and in multiplicity of cases, gravity of consequences, facility of operative treatment, and the brilliancy of results, it may be said to outrank any other affection of the upper respiratory tract.

At the vault of the pharynx a number of muco-lymphoid follicles are grouped together forming a compound gland, analogous to the tonsils and known as the third tonsil, the pharyngeal tonsil or the tonsil of Luschka. In the normal state this is not of sufficient size to deserve such appellation, but when hypertrophied, as it frequently is, it bears some resemblance to the faucial tonsil in a state of enlargement.

In form, contour, and consistency the growth presents many gradations from the soft stalactitic "adenoid vegetations" up to the dense and more fibrous individuate variety, in which the mass is made up, in large part, of but a single neoplasm, of firmer consistence, smooth surface, and more or less irregular contour, according to size and degree of impaction. Fig. 1, accurately drawn



Figure 1.

from nature, is a typical representation of an average case in which the naso-pharynx is seen to be occupied by a fimbriated adenoid mass, which occludes, in large part, the posterior nasal choanæ, and so presses downward the upper lip of the tuber of the left Eustachian orifice as to practically close the channel to the middle ear.

Etiology.—The disease is frequent among children, not uncommon with adolescents, and not at all rare during early adult life. Children of inherited syphilitic or tuberculous diathesis, and

those perhaps otherwise the victims of scrofulosis, are predisposed to it. It is unnecessary to discuss the relationship between these diatheses. Whether as a result of inheritance of one or more of them, or of acquisition through bad hygienic influences, we recognize in the state called scrofulosis a debilitated constitutional condition, one of the characteristics of which is a pronounced tendency toward hyperplasia of the lymphatic and lymphoid structures. The reason therefore one can not state any more than one can formulate a full explanation of the normal cell proliferation. It concerns that of which we know naught—the ultimate essence of life itself. Climatic inequalities furnish adequate exciting causes. Repeated acute congestion from "cold" acting upon a structure already the subject of diathetic predisposition to hyperplasia, serves to establish a chronic hypertrophy of the group of muco-lymphoid glands in the naso-pharynx. This mass is then constantly swathed in a viscid muco-purulent, readily decomposable secretion, the product of its own elaboration, which, by exciting and maintaining irritation, further conduces to the development of the growth.

Symptoms.—The space of the naso-pharynx is, by nature's law, designed to be free, and to serve as a common area of air communication between the five openings which enter it.

The Eustachian tubes open into it, one on each lateral wall posterior to the nasal choanæ, and upon perfect patency of these openings, together with free nasal respiration, the power of hearing is dependent, for ventilation with normal air pressure in the cavity of the middle ear, is essential to correct auditory sense. Deafness, therefore, is frequently a deplorable symptom, and one which is liable to become permanent unless speedy relief be afforded.

Into this space open also the posterior nares, the natural respiratory passage being *via* the nose and naso-pharynx. Adenoid hypertrophy therefore serves as a plug to the posterior nasal openings, and obstructs nasal respiration completely or in part according to the degree of glandular enlargement. From this point we find it a matter of exceeding interest to trace the origin and development of each successive step in the series of deformities consequent upon this condition. The plugging up of the posterior nares necessitates oral breathing, and the constantly open mouth interferes with the normal adaptation of certain facial muscles, which in turn effects radical changes in the contour of the soft and developing bones of the face, the whole resulting in a physiognomy characterized by a vacant, stupid, almost idiotic expression of countenance, which can be better illustrated by photographs from nature than described. (Fig. 2.)

The hanging lower jaw causes the face to appear elongated. The nose is pinched or its alæ

distended, while the angles of the mouth and eyes have a drawn appearance.



Figure 2.

Moreover, as pointed out by Henri Chatellier,¹ of Paris, cited by Hooper,² of Boston, the air cavities in communication with the nose, as the frontal, maxillary, sphenoidal, and ethmoidal sinuses, which are essential to the proper expansion of their respective bones, cease to develop when the circulation of air through the nose is interfered with, thus altering nature's intent regarding the dimensions of the face and head, and still further deforming the physiognomy. Dr. Hooper has also described and illustrated the next link in the chain of deformities—the high-arched hard palate and V-shaped indentation. The naturally rounded arch of the roof of the mouth is formed, in large part, by the palate process of the superior maxillary bone, which also constitutes a corresponding portion of the floor of the nose. Augmentation of atmospheric pressure upon the buccal surface of the palate process and the impact of air currents to and fro during mouth-breathing, together with diminution of intra-nasal air pressure incident to nasal obstruction, gradually force upward the centre of the hard palate, and change thus the obtusely rounded Romanesque arch into one of Gothic shape—the pointed or high-arched palate invariably existing in association with long continued and excessive adenoid development during childhood. (Fig. 3.)

Elevation of the palatal arch lessens the transverse diameter of the jaw and causes it to grow pointed in front—the so-called V-shaped indentation—and with the resulting contraction of the alveolar process, the teeth, especially those near the point, are crowded into various grotesque ag-

gregations, or are rotated on their axes—a condition depicted in Fig. 5, drawn from a typical case, in which the two central incisors overlap, and the two lateral incisors undergo a quarter rotation and stand at right angles to the alveolar process.

Dentists have long recognized what they call the "habit" of mouth-breathing as a prolific source of irregular indentures, and S. C. G. Watkins, in a recent number of the *Ohio Journal of Dental Science*, says: "I know a child which at birth and up to the third year had a perfectly formed and normal arch; but it acquired the habit of breathing through the mouth, and the arch is becoming narrow—so much so that you cannot do more than place your finger in the centre of the arch. Now, at the age of 9 years, there has been a radical change in the shape of the mouth, and from no other reason than oral breathing."

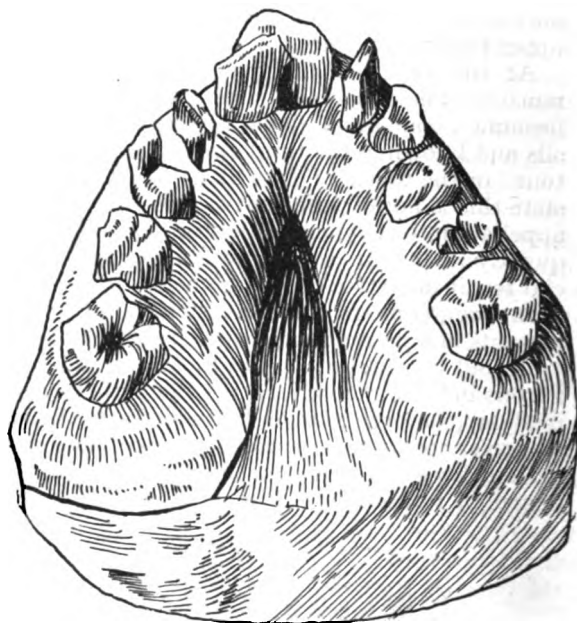


Figure 3.

We would advance a step and assert that mouth-breathing is but rarely a mere "habit." It conduces to so much discomfort that even the babe would feel inclined to close this aperture could he secure the requisite amount of air through the nose and naso-pharynx. Aside from greatly debilitated states, it is occlusion to some degree of these passages which necessitates the habit.

Next, elevation of the palatal arch must produce contortion within the nose. Deflections of the septum are rarely congenital; indeed, the only part of the septum which is ossified at this period is the vomer, the whole ethmoid bone, including the vertical plate, being in a soft cartilag-

¹ Des Tumeurs Adenoides du Pharynx, Paris, 1886.

² "The Mechanical Effects of Adenoid Vegetations in Children." Reprint from Medical and Surgical Report of the City Hospital of Boston, Fourth Series, 1889.

³ It is proper to state that other dental authorities deny this influence of oral breathing in the causation of deformed indenture, and attribute the latter solely to a perverted formation of the permanent set of teeth. The association, however, between adenoid vegetations and the high-arched palate is so constant that an etiological relationship must exist.

inous state. Traumatism, as shown by Robertson in the investigation of 217 cases, cited by Delavan,⁴ cannot fairly be made to account for much over half the number. Now, the septum, composed of the vomer, the perpendicular plate of the ethmoid bone and its cartilaginous portion, is unequal in power of resisting compression to the bones by which it is incased. Designed by nature to fill vertically the natural space between the roof of the nose and its floor, the abbreviation of this space by elevation of the palatal arch through the instrumentality of naso-pharyngeal adenoid hypertrophy cannot result otherwise than in forcing the septum to provide for itself by bending and curving laterally in various directions—a condition which is diagrammatically represented in Fig. 4, and which explains the etiology of the remaining moiety of cases of deviation of the septum narium. Furthermore, guided by the contorted septum, even the external nose may be twisted to one side—a deformity common enough in its milder aspects, and not unfrequently seen in aggravated forms. Within the nares also the septal deflection acts as an additional impediment to nasal respiration and drainage, and becomes a potent factor in the evolution of hypertrophic rhinitis, or that form of nasal catarrh characterized by enlargement of the turbinated bodies. (Fig. 5.)

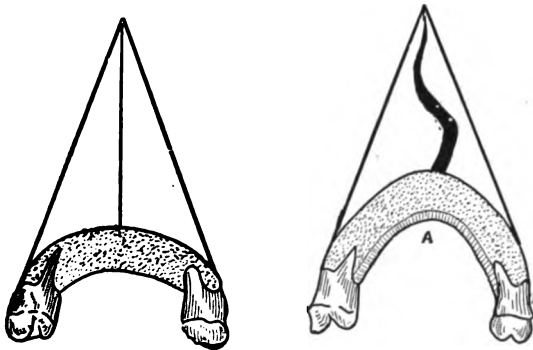


Figure 4.

Finally, not only, as before said, do these unfortunates *look* stupid, but they really *are* stupid and exhibit abundant evidence of mental hebetude, with inability to fix the attention to learn, to memorize, or to reason, the whole evidencing an impairment of cerebral function which Dr. Guye,⁵ of Amsterdam, has recently described under the name of *aproxexia nasales*. Indeed, we hold it not illogical to believe that in extreme cases of long duration, associated perhaps with deafness, such alteration of cerebral function might ensue as to result in absolute idiocy.

Three varieties of thoracic deformity are observed to accompany obstructive naso-pharyngeal adenoid hypertrophy, the association of one or

other form, in advanced cases, being so constant that a direct causal relationship, although difficult of absolute demonstration, can reasonably be assumed.

For the induction, however, of two of these forms, the "pigeon-breast" deformity and the "barrel-shaped chest," the intermediation of still another symptom—bronchitis, seems essential.

The influence of hypertrophic rhinitis and obstructive deflection of the septum narium in the causation of certain cases of bronchitis is now a matter of common observation. Plethora of the blood-vessels of the nasal mucous membrane tends to develop a like plethora in the bronchial mucous membrane, and anaemia induced in the turbinated tissues tends to effect an anæmic state of the bronchial tubes. The physiological relationship between the two regions—the nasal erectile tissues being designed to warm and moisten the inspired air—demands, through the vaso-motor system, an intimate correspondence between their blood supplies. As might therefore be expected, a pathological correspondence also obtains, and without entering into a discussion of the hypothetical details of nervous mechanisms, we simply state the oft-observed fact, that turgescence and vaso-motor paresis of the nasal erectile tissues may occasion vaso-dilation, congestion, and inflammation of the bronchial mucous membrane.



Figure 5.

Now, we have just seen how adenoid vegetations, persisting through early childhood, can occasion obstructive deflection of the septum with hypertrophic rhinitis, and, in many instances, chronic bronchitis is thereupon superinduced.

Furthermore, adenoid hypertrophy is, in itself, an etiological factor in the production of chronic bronchitis. Especially in neurasthenic individuals, it is exquisitely sensitive to reflex producing impressions, and its irritation may result, reflexly, in spasm of the glottis, cough, asthma, and parietic vaso-motor bronchitis.

Miss A., for instance, was affected by large adenoid vegetations, and suffered also with profuse bronchitis and from alarming, rapidly recurrent attacks of spasm of the glottis. On two occasions we were able to excite the glottic spasm

⁴ Reference Handbook of the Medical Sciences, Vol. v, p. 213.

⁵ "On Aproxexia," by Dr. Guye, Professor of Otology in the University of Amsterdam. Journal of Laryngology and Rhinology, December, 1889.

in our office by simply titillating the adenoid mass by a probe. They culminated with extreme suddenness and endured for a couple of minutes, the second paroxysm being so severe as to suggest hasty preparations for tracheotomy and to cause us to desist from further experimentation in this direction. Surgical removal of the adenoid growth, somewhat incomplete for want of time, resulted in a disappearance of the bronchitic symptoms, and in such amelioration of the glottic spasms that they ceased to be a serious inconvenience.

Again, for example, in the case of a young boy who suffered from chronic bronchitis with frequent asthmatic paroxysms, the removal of an associated adenoid mass from the naso-pharynx resulted in an immediate disappearance of all symptoms for a period of five months, but with subsequent rarer and milder recurrences. Indeed, in all cases of chronic bronchitis with children, adenoid hypertrophy should be sought for, as the upper and lower respiratory tracts constitute one continuous surface, having intimate nervous and vaso-motor connections, and the removal of adenoid vegetations, if present, will eliminate at least one, and possibly the chief, source of irritation.

With the continuance of bronchitis during the early developing years, the irregular convulsive action of the respiratory muscles incident to cough and dyspnoea is productive of the thoracic deformity known as "pigeon-breast," in which the sternum protrudes, the antero-posterior diameter being lengthened at the expense of the transverse diameter. The same symptom is influential also in the production of the emphysematous or "barrel-shaped" chest, as the coughing spells and powerful expiratory efforts, by forcing the air to the superior part of the lungs, serve to distend the antero-posterior diameter of the chest at this point.

The culmination, under like conditions, of one or other of these two deformities, is seemingly determined, with some by age—young subjects being little prone to emphysema and the deformity tending toward "pigeon-breast;" and with others, by the existence primarily of any degenerative change in the alveolar walls which might predispose to emphysema and in consequence to the "barrel-shaped" deformity.

The third variety of thoracic deformity—the "flat chest," is due directly to obstruction by the adenoid growth itself, and is an indrawing of the chest walls, especially a shortening of the antero-posterior diameter which results from an insufficient air supply to the lungs. The impairment of the normal respiratory relations by exclusively oral breathing, is such that complete expansion of the chest does not occur and a sufficient amount of air cannot be obtained, a fact which any one can test for himself by comparing the ease of deep inspiration through the nose with the laboriousness and incompleteness of similar efforts continued through the mouth alone.

The chest in these cases becomes flat and thin (Fig. 6, after Hooper), has a sunken appearance over the lower part of the sternum, perhaps a deep concavity at the ensiform cartilage with depressed intercostal spaces—a permanent, mild degree of the retraction observed during the dyspnoea of membranous croup, and due, as Löwenberg,⁶ cited by Hooper,⁷ has explained, to excess of atmospheric pressure on the outside of the chest, together with the labored action of the diaphragm and intercostal muscles in efforts at inspiration.



Figure 6. After Hooper.

Such deformities must result in pulmonary asthenia, and we might proceed to trace therefrom predispositions to pneumonia and tuberculous infection, but we have said enough—sufficient to reiterate that herein lurks one of the most formidable enemies of early life, and to demonstrate that if one would save to the adult his face, his figure, yea, even his reason, one must give to him in childhood a clear respiratory passage.

70 Monroe St.

A SIMPLE AND RELIABLE ASTIGMOMETER.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY F. C. HOTZ, M.D.,
OF CHICAGO.

PROFESSOR OF OPHTHALMOLOGY CHICAGO POLICLINIC, AND
ATTENDING SURGEON TO ILLINOIS CHARITABLE
EYE AND EAR INFIRMARY.

It is an old saying that "haste makes waste;" and every medical man will do well to have these three words inscribed in golden letters over his desk; for three-fourths of all the mistakes made in medical practice can be traced to hasty examination. But while we should spare no time in

⁶ *Tumeurs Adenoides du Pharynx nasal*, Paris, 1879.

⁷ *The Mechanical Effects of Adenoid Vegetations in Children*. Reprint from the Medical and Surgical Reports of the City Hospital of Boston, 1889.

order to obtain a correct diagnosis, we do not like, on the other hand, to waste any time unnecessarily in the busy hours of the consulting room. While our examination should never be hurried, it often can be quick or slow, short or long, the time consumed being dependent a great deal on the method we employ; the one method may give us the desired information in five minutes, which we cannot get by another method in less than fifteen minutes.

In this respect the examination for astigmatism furnishes us a good illustration, and if we make quickness and precision the essential conditions for the best practical test for astigmatism, the methods at our disposal show a great difference in their practical utility.

When we examine for astigmatism we wish to find out first, of course, whether the eye is astigmatic; and if it is, we want to know the exact position of the two principal meridians. If this point is established with precision it is an easy task to ascertain the refraction of either meridian, and thereby the degree of astigmatism, and to select the proper glasses.

Now, we can diagnosticate astigmatism by the direct ophthalmoscopic examination, but you will admit this is not a quick and easy way. Much quicker and easier is the shadow test; but neither method can determine with precision the direction of the principal meridians.

We may often succeed in detecting the astigmatism very quickly by rotating a cylinder glass before the eye, but just as often our patient's answers are so vague and misleading that a great deal of time is consumed before we are reasonably certain whether astigmatism exists, and where the meridians are located.

And as to the so-called astigmatic fan, or clock, and all its modifications, this test demands a degree of accurate observation the fewest of our patients possess. Especially with children (and they constitute no small proportion of our cases), this test is very tedious and unsatisfactory; but even grown persons seldom are quick in observing any marked difference in the lines unless their astigmatism is of a high degree. I have often tested patients upon this point after their astigmatism had been established by other means; and the most of them could not see any difference in the lines until I pointed out those lines which, according to their astigmatism, had to be the most distinct, and told them to compare them with those lines which had to be the least distinct; then, and not until then, they began to appreciate the difference. But in the examination, of course, it would never do to lead the patient in this way, because if you ask them whether they do not see certain lines more distinctly than others, nine out of ten will imagine to observe a difference which they do not see, and make you diagnosticate an astigmatism which does not exist.

Dr. Culbertson's prisoptometer is a very ingenious instrument to detect anomalous refraction; but it, too, puts a greater demand upon the observing power than a great many patients can meet. I, at least, have found that it is impossible for many patients to appreciate slight variations in the contact of the two discs so that they could tell with precision whether the contact remains exactly the same during the rotation, or at which angle of rotation it is disturbed the least, and at which the most.

It would be tiresome to review all the methods and costly instruments which have been devised for the examination of astigmatism; they are no better than those I have mentioned. These, I believe, are the most popular methods, and I have shown that none of them fulfils our conditions of quickness and precision in establishing the presence of astigmatism and the direction of the principal meridians; especially for the lower grades of astigmatism they are not very reliable.

Now, it has always seemed so strange to me that we should waste our time with these elaborate methods, when we have a much simpler and more sensitive test, which will tell us quickly whether an eye is astigmatic, and at the same time also give us the correct position of the faulty meridians. This test is the retinal image of a distant point of light.

Since the rays coming from such a point which pass through the meridian of greatest refraction are focussed sooner than the rays which pass through the meridian of least refraction, the image upon the retina can never be a sharply defined luminous point. If the retina is at or near the anterior focal line, the image will be elongated in the direction of the meridian of least refraction, and if the retina is at or near the posterior focal line, the image is drawn out in the direction corresponding with the meridian of greatest refraction. Whenever, therefore, a patient sees a distant point of light elongated we know he is astigmatic, and the line of elongation gives us at once the direction of the one, and indirectly also that of the other, meridian, because they are always at a right angle to each other. And as it does not require a keen power of observation to tell the approximate shape of a small hole, this test is as quick as it is sensitive and precise; for it is very easy even for a child to determine whether the light looks round (like a pea or marble), or oblong (like an egg, an almond, or half moon), or whether it has no definite form (like a star).

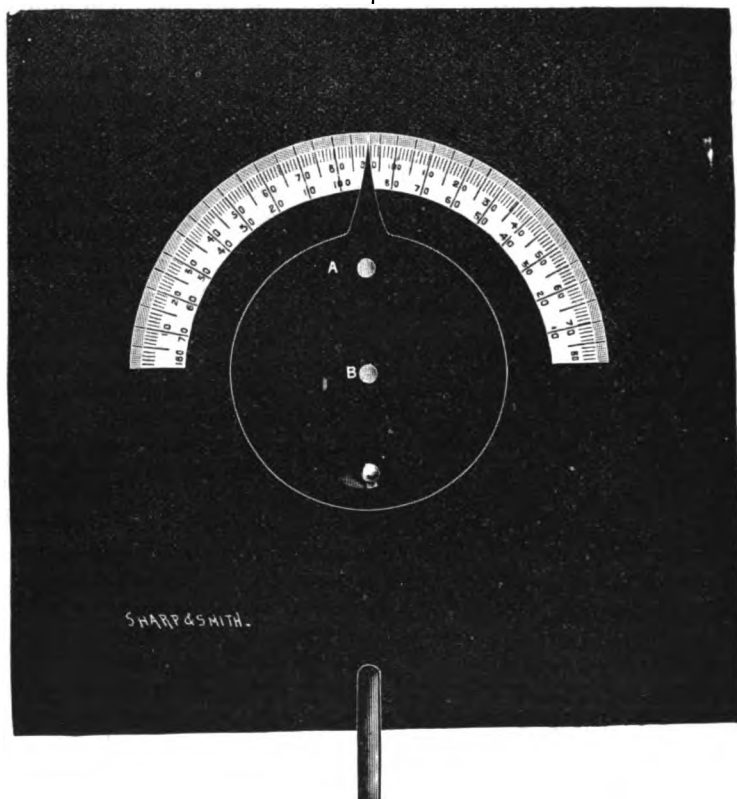
Theoretically this distant point of light should appear elongated to every astigmatic eye, with the exception of such cases of mixed astigmatism where the myopia of the one meridian is about of the same degree as the hypermetropia of the other principal meridian; for, under these circumstances, the retina being about in the centre of

the focal interval, receives a round, though indistinct, dispersion image.

In persons over 40 or 45 years of age you will find the results of the test agree with the theory. But among younger persons with active accommodation you will find a great many who, though astigmatic, see the hole perfectly round, because their astigmatism is corrected by the unequal contraction of the ciliary muscle. I have found, however, that if such patients look steadily at the light hole they notice its form is constantly changing from round to oval, and back to round again. This observation shows how sensitive this test is, and at the same time furnishes us an interesting evidence of the unequal contraction of the ciliary muscle.

(+ or — as the case may be) which corrects the ametropia of one meridian and thus reduces the compound to simple astigmatism will produce a better defined image and reveal at once the elongation of the light point. And in the same way we can reduce mixed astigmatism to the simple kind, and obtain the distinct oval image by our test. Sometimes a patient will see the light hole double instead of oblong; and in this case, one hole above the other, or to the side of the other, indicates the meridian just as well as the vertical or horizontal elongation does.

I began using this test in 1872, when I had a little instrument made for this purpose, which, in want of a better name, I baptized "astigmometer," although I employ it more for *detecting* than for



But, fortunately, we have in the mydriatics the effectual means of eliminating the disturbing influence of the ciliary muscle; and I never consider the examination for astigmatism in a young patient completed unless the accommodation has been suspended. When this is done, the light hole will always appear elongated in simple astigmatism, and in all cases of compound astigmatism, provided the refraction of one of the meridians does not depart from emmetropia by more than one-half or one dioptre. With higher degrees of ametropia in both meridians the retinal image is so blurred that the patient cannot make out any definite shape; but the proper spherical glass

measuring astigmatism; but you can measure its degree with it just as well.

*Description of the Astigmometer.*¹—The instrument which I take pleasure in showing you now consists of a blackened metal screen 20 cm. (8 inches) square; in its centre it has a round aperture (B); and the semicircle of a protractor is fastened to it so that the 90 degree mark is exactly perpendicular over the round hole and the 180 degree mark exactly on a horizontal line with it. Between the protractor and the central hole a semicircular slot 10 millimeters wide is cut into the screen, but is covered in front by a round

¹ For sale by Sharp & Smith, 73 Randolph street, Chicago.

metal disc which can be rotated round the central opening, and which has near its periphery a round hole (A), so arranged that it travels exactly along the slot when the disc is rotated. Just over this second hole (A) the edge of the disc is drawn out to an arrow-like point which reaches the concave margin of the protractor. This point and the centres of the two holes are exactly in a straight line, and therefore the angular degree of the protractor to which the arrow points, will always show the radius in which the movable hole (A) is situated. Both holes are exactly the same size; on the front side they have a diameter of 4 millimeters, but on the other side they are much larger. This was done to make sure that no shadows could interfere with our observations; for the metal around the holes (especially around the central one) is so thick that if they had the same size on the posterior as on the anterior face the posterior edge might cast a shadow when the hole is illuminated from behind, and this shadow might make the hole appear to the spectator in a different than its true form, though he be not astigmatic. Finally, in order to avoid any glaring light and to make the outlines sharp and distinct, the holes are filled with small bits of ground glass so that they light up with a uniform mellow light. Diametrically opposite the arrow there is a small knob, by which the disc can be conveniently rotated, if necessary.

How to use the Astigmometer.—The instrument may be set in a window shutter or placed in front of a gas or lamp light. My instrument is set into a movable bracket which is fastened to the wall near the gas light. When not in use it is turned to the wall and thus it is out of the way; when I wish to use it I swing the bracket so that the screen stands exactly perpendicularly and about six or eight inches in front of the gas light, which stands just a little higher than the central hole. The screen is so high from the floor that the holes are about on a level with the eyes of the patient sitting (if an adult) or standing (if a child) 15 feet away. Especial care must be taken that the plane of the screen is exactly at right angle to the visual line of the patient. The room is then darkened, the gas light turned on just enough to light up the holes, and the patient is directed to look at them, with one eye at the time, and to tell whether he sees them distinctly enough to make out their form. Never ask a leading question like this: "Do you see these round holes?" because the *suggestion* of the round form implied in the question, will make the patient see the holes round, even though they actually appear to him oblong. Let the patient describe what he sees, and you will easily and quickly find out whether the holes appear indistinct, or round or oblong.

The great advantage of this instrument is that

as soon as, with or without spherical glasses, the holes appear drawn out, we do not only know the eye is astigmatic, but we also know, and at once, the exact direction of the faulty meridians. If the patient declares the elongation is straight up or straight across we know of course the two meridians are vertical and horizontal. But if the elongation occurs in an oblique direction the patient can seldom estimate accurately the angle of inclination; and just here this apparatus is of the greatest value, for it will determine the inclination quickly and precisely. While the patient is looking at the holes we have only to turn the round disc to the right or left until the peripheric hole (A) is moved to a point where its long axis (as seen by the patient) makes one straight line with the long axis of the stationary central hole. The degree to which the arrow then points gives the exact angle or inclination of the meridian. For instance, if the patient sees the holes drawn out obliquely up to the right, I must move the peripheric hole, if it stands at 90 degrees, down to the right to bring it into the line of inclination. Before doing this, I explain to the patient, by means of two pencils, what I wish to accomplish and what I mean by "bringing the two ovals into the same line;" when he understands it and I begin rotating the disc he is to tell me to stop when the holes are in line. This done, I look at the indicator, it points to 45 degrees, and I know at once the one meridian is inclined 45 degrees, and the other, of course, 135 degrees.

Dr. G. M. Burnett, who, as far as I know, is the first author since Donders, giving a description of this test, says: "But while this gives us the direction of the principal meridians, it furnishes no information as to the form of the astigmatism, the light spot being drawn out in the same direction in M. and H." This is true, but if you wish to get this information, you can quickly have it by a few trials with spherical glasses. Suppose, for instance, the light holes appear elongated vertically and a + 1D. makes them still longer, but at the same time broader and less distinct, while a — 1D. reverses the elongation and draws the holes out horizontally, you know at once there is myopic astigmatism in the vertical meridian; and if you like, you can determine even the exact degree of the M. by that glass which changes the light spot to a horizontal line.

Whether you like to determine separately first the refraction of the meridians by this test, and then to find out the visual acuteness by means of glasses and the test-types, or whether you prefer to ascertain the refraction and vision in each meridian at one and the same time with the aid of the stenopaic slit;—this is perhaps a matter of personal choice. I, for my part, use the stenopaic

slit and test-types as soon as the astigmometer has furnished the direction of the meridians; for in this way I can find out the quickest which glasses will give the patient the best possible eyesight, and this is, after all, the practical and final problem our examination for astigmatism has to solve, and which it can solve only by means of the test-types and lenses. All the other methods are useful only in preparing the way for this final test. And among these preliminary tests I regard the distant point of light as the most useful one. It is probably the oldest test for astigmatism; for Prof. Donders, as we all know, has used it extensively in his classical investigations on astigmatism. In 1873 Dr. W. L. Purves spoke of its merits in Graefe's Archiv (xix) and described an instrument very similar to the one which I had made for my own use a year previously. But as I have not seen it used by any one else, and having tested its reliability and practical value these 18 years, I cannot longer resist the desire to see it more generally employed; and I feel convinced you will find it, as I did, a most useful addition to your office outfit and a time-saving instrument in your practical work.

103 State street.

RHEUMATISM, AND ITS TREATMENT BY TURKISH BATHS.

Read in the Section of Practice of Medicine, Materia Medica and Physiology at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY CHAS. H. SHEPARD, M.D.,
OF BROOKLYN, N. Y.

At what time the disease called rheumatism first made its appearance is not known. The name was first applied in 1642, in a treatise on the subject by one of the most celebrated physicians of his time, M. Guillaume de Baillou, who was an author of several medical works of great merit.

No disease has proved more perplexing. Its uncertain course at times seems to baffle the physician at every point. Volumes have been written concerning its character, and other volumes still have been devoted to the various systems of treatment, which from time to time have held the favor of the medical world. Nor is the subject exhausted. While much is unsatisfactory, and many new facts are continually discovered, opportunity yet remains for the investigator to discover more. Every new thought advances the welfare of mankind. It is the purpose of this paper to suggest some conclusions on the treatment of this disease which a somewhat extensive study, together with a practice of nearly thirty years' duration, have developed.

Rheumatism exists in three forms: the acute, the sub-acute, and the chronic. The prominent symptoms are well known. One most character-

istic of acute rheumatism is inflammation, attended with intense pain in and around the joints, and with marked febrile and nervous conditions that indicate a disturbance of the nerve centres. Another noted symptom is the presence in the blood of an excess of lactic acid, which has a decidedly stimulant action on the cutaneous surface. Subacute rheumatism is a milder form of the same disease. Chronic rheumatism is a name which is loosely applied to many ailments not really of rheumatic origin. Properly speaking, it is a milder form of the subacute variety.

The pathology of rheumatism is acknowledged to be obscure, and consequently there is great diversity of opinion regarding its essential nature. These different conditions are the expression of but one morbid process with varying forms of intensity. At one time rheumatism was regarded as a general or infectious disease; at another, as a fever; and again, merely as a peculiar inflammation of the joints and other structures. Of theories now in vogue, perhaps the most prominent one is that lactic acid accumulates in the body, and that the symptoms are directly traceable to the action of this poison upon the system. There is the nervous theory, the germ theory, and also the malarial theory.

Rheumatism is a constitutional disease, evolved in the system, the culmination of excretory products. The freedom from rheumatic symptoms immediately following a single attack strongly indicates the expulsion of noxious matter from the system. As man is but the product of his environments, no valid claim can be made that any one cause is sufficient to account for all the disorder that this disease produces. It would be nearer the truth to call rheumatism the sum of all the transgressions of its victim. Lactic acid is a normal product of tissue metamorphosis. The morbid action which constitutes rheumatism gives rise to an excess of the acid, and this excess and the rheumatic symptoms both result from the same cause.

It is reasonable to suppose that the special poison of rheumatism may find its principal obstruction while circulating through the tense fibrous tissue of the joints, and thus by pressure on the nerves of those parts produce the pain characteristic of the disease. Retained excreta exercise two distinct actions: one, a stimulant action on the organ by which they are naturally eliminated; the other, a disturbing action on the tissues which supply the materials of their formation, and there is always danger from every arrest of the nutritive changes of the system.

Of the predisposing causes of rheumatism, one of the most importance is inheritance, which can be traced in 27 per cent. of all cases. Some bring it on by overwork or exposure in damp or unsanitary surroundings. All nerve exhaustion tends to lower the vital reaction of the individual, so

that a slight occasion often culminates in this disease; but in most cases the attack is induced by error or excess of alimentation. Indigestion is a frequent cause of rheumatism in the aged, and there is no doubt that tobacco and alcohol are responsible for a large amount of this as well as other disease. The action of tobacco on the nervous system, which is mistakenly supposed to be a tonic, is in reality only a toxic effect, and alcohol, by preventing the elimination of waste material, helps to aggravate every weakness and increase every predisposition to disease. Those alcoholic drinks that contain lime salts are particularly injurious to rheumatics.

Rheumatic fever is simply a crisis, in other words, a means of expelling morbid material from the system, and instead of trying to suppress it, we should aid nature in all her efforts to eliminate this poison. Disease, in whatever form it may appear, is but an effort of nature to free itself from some offending material in the system.

There is probably no disease to which so many different modes of treatment have been applied. Until about the middle of this century, bleeding was considered the sheet anchor in the treatment of acute rheumatism. Facts, however, tended to show that patients recovered more rapidly and satisfactorily when they were not bled, and the practice generally was abandoned, for rheumatism as well as other diseases. Purgatives, diaphoretics, sedatives, and many other remedies have had their day. Then came the lactic acid theory, which naturally led to the alkaline treatment. Lemon juice also found favor for a time, with results quite as good as those from the alkalis. Of all these remedies, not one can be confidently relied upon. Indeed, it has been stated by good authority, that we have no remedy for acute rheumatism. Even the salicylates, salol, colchicum, iodide of potassium, etc., have proved a disappointment in many cases.

So unsatisfactory did all known remedies prove, that about thirty years ago some physicians gave up all treatment, simply kept the patient warm in bed, ordered a light simple diet, and administered a placebo. Dr. Flint published, in 1863, an account of thirteen cases treated on this plan, with good results. Two years later Dr. Sutton, of Guy's Hospital, gave an equally good report of forty-one cases which were treated medicinally with mint-water only. This expectant treatment was adopted by many with results as satisfactory as those from more active measures.

For the treatment of a constitutional disease, we must needs have a constitutional remedy, and this is furnished us in the modern Turkish bath. Having devoted over thirty years to the study of preventive medicine, and having been during that time in an institution in daily contact with rheumatism, our opportunities have been exceptional. Of over three thousand cases of this dis-

ease under treatment, at least 95 per cent. have been either entirely relieved or greatly helped. Some, who were treated over twenty years ago, have stated that they have not had a twinge of rheumatism since. Under this treatment swollen joints have resumed their normal size, acute pains have been eradicated, and the patient restored to general good health. Men are to-day actively engaged in business who were brought to us by their physicians, who acknowledged that ordinary medication had failed to reach their case. The records of every establishment using this remedy will bear out the statement that no rheumatic can submit to the process without deriving great benefit, and that remarkably few have persevered in its use without experiencing permanent relief.

It therefore needs no apology for bringing to the notice of the profession a remedy that has been almost invariably successful, and that is, *heat*; the simplest, the easiest, and the most effective of remedial agencies. It is an all-important fact, that we have perfect command over the blood circulation by subjecting the skin organism to the influence of artificial heat, and on this the whole sanative virtues of the bath depend.

This opens a new field, and offers results that are well worth investigation and trial. Every physician should know what a Turkish bath is, and acquaint himself with its practical workings. It is no new-fashioned remedy of to-day. Its history dates back to tradition. We read of it in the early records of the Romans. In the Augustan period, the bath flourished in its greatest magnificence. All the resources of science and art were made contributory to its completeness. When Rome overran Gaul and Britain, the bath attended her progress, and ruins of the splendid structures then erected are now to be seen in many places, notably at the Hotel Cluny in Paris, and at the city of Bath, in England. The success of the Roman armies was due in a large measure to the bath, which was to them the hospital and the pharmacopoeia. Traces of this bath are also found in ancient Mexico, in Ireland, and in many other countries.

For its modern revival we are indebted to David Urquhart, of honorable memory. He was an enthusiastic Englishman, who had represented his country in Turkey, and there became enamored with the bath as an institution. One chapter of a book which he wrote, entitled the "Pillars of Hercules," and which was published just forty years ago, was devoted to the Turkish bath, and first called attention to the subject.

The Turkish bath of to-day is a most desirable resort, where all modern improvements have been brought into subjection for the comfort and enjoyment of the bather. Treatment by the Turkish bath immediately becomes a luxurious method of getting well. It is a sweating process, and

heat is its vital principle. This can be used as high as 200° Fahr., and over, in cases of emergency. It would be impossible for bacteria, or disease-germs of any kind, to live in such a temperature, and it can be readily seen that with the circulation constantly coming under the influence of such an action it would soon be purified and vivified. By this bath we can destroy personal contagion. This has been demonstrated in many cases.

A few moments in the hot room brings a positive degree of comfort to the rheumatic patient, and soon so much relief is given by the heat, that he will almost imagine that the disease has left him. Every pore of the skin is made an open sluiceway for the discharge of a large amount of perspiration, disease-germs included. The good effect of the manipulation which immediately follows is intensified by this heated condition of the body. Certainly nothing can purify the external and internal man more than this process, nor can any agency better assist the vital energies in the struggle against disease. The circulation is invited to do its perfect work, and as the improved action of any organ only comes through a quickened circulation of the blood in that part, so we find that every function, influenced by this natural stimulus, quickly takes on a normal condition. When the body is thoroughly heated, and the circulation most active, the reaction from a cold application is most agreeable and salutary. Inflammation necessarily implies a want of proper circulation. Some cause has plugged up the finer terminal vessels of the part inflamed. A condition of stasis has been brought about. By applying heat, we relax the tissues so that the circulation can pass on, and the offending material be thrown out through the usual excretory channels. Whether or not this theory be true, the fact remains that thousands have experienced entire relief by this process.

In ordinary treatment it is observed that while the rheumatic patient may complain of the unpleasant effect of the perspirations, he never complains of their weakening effect, such as is observed in hectic fever. On the contrary, he may describe them as bringing great relief to the bodily condition.

The perspiration and increased circulation brought about by the heat are not at all exhausting or debilitating, for there is no drain on the vitality, and there is an essential difference in this respect from the perspiration brought about by exercise.

That this bath is weakening or in any manner debilitating, is thoroughly controverted by many facts, among others that the shampooers, who work in the heat several hours daily, never lose a day from its effects. On the contrary, they are examples of good health and vigor. Invalids, weakened by disease, and not able to sit up all day, have been subjected to this treatment once,

and even twice, daily, for months at a time, the result being a constant improvement in health, strength and flesh. In fact, the more desperate the case, the more active and persistent the bath treatment. Many trades find it necessary for their workmen to labor in a temperature considerably above 100° Fahr., and the men are far from being injured thereby. Prof. Carpenter, in "Human Physiology," endorses this same idea, and Chabert, the "Fire King," was in the habit of entering an oven whose temperature was from 400° to 600° Fahr. In fact, the whole weight of testimony disproves the notion that this bath is in any way enervating.

For those disposed to rheumatism, a careful and well selected dietary should be chosen. Sufficient only should be eaten, and that thoroughly masticated; the food being plain and simple. By a thorough *régime* of this kind, and a systematic course of treatment by the Turkish bath, all may be freed from any liability to this most uncomfortable disease.

Much has been and can be done by the private practitioner in the way of expectant treatment, or the let-alone policy, by preventing the patient from injurious dosing or troublesome friends, and mainly by making him comfortable and simply assisting nature to throw off the disease as fast as possible. The cold bath has a wonderful tonic effect, but the greatest relief is brought about by the sweating bath followed by the cold dash. The change from hot to cold has an invigorating effect upon the nervous system, and this is in line with the Turkish bath treatment. A little ingenuity will often enable the physician to improvise what will answer the purpose for the time being, in the patient's home. Wet compresses to the inflamed joints sometimes give great comfort. It is plainly impossible, however, in private practice, to have all the facilities to handle this disease as comfortably, or to relieve as quickly, as in an institution where all these arrangements are made a specialty. Therefore, when it is practicable, it is advisable to at once remove the patient to an institution where the Turkish bath and its accessories can be secured. The advantages of medical care, proper diet, and the regulation of the treatment to the condition of the patient by one who has had experience in the matter, are desirable.

Out of the multitude of rheumatic patients that have come under our care it would be unnecessary, and not to the purpose, to give the history of even a tithe of them. We have, however, selected six typical cases, simply to illustrate the treatment.

Case 76.—H. W. W., aged 44, was brought to the institution January 29, 1867, helpless from acute rheumatism, having been under regular treatment over six weeks. He was unable to move a joint in his body without much suffering,

and was obliged to have an attendant sit up to help him turn over during the night. He was given one treatment daily, and for one week was carried to and from his room to the bath. After that time he could walk unaided, and continued to progress till February 25, when he returned to business, gradually taking on his full duties. He had then received but twenty treatments. He has continued the use of the Turkish bath once every week since, and to this day, May 20, 1890, he has had no return of rheumatism.

Case 84.—T. B., Jr., aged 35, came to the institution April 25, 1867, suffering from rheumatism partly developed. After two treatments the rheumatism was so acute that he was unable to move without great pain, attended with high fever. After six days, during which he took two treatments a day, he was able to return to business, and has not been troubled with rheumatism since.

Case 251.—C. R., aged 20, a young German, was brought to the institution suffering from acute rheumatism, unable to walk or help himself. He was given two treatments a day, and for two days he was apparently no better; thought himself that he was worse; but in one week he was able to go up and down stairs without help, and in three weeks he left for home without an ache or pain.

Case 2248.—H. L. R., aged 55, case of rheumatism in right shoulder, reported that after the first treatment he had the best sleep of any time during the previous fortnight, and with daily treatment improvement continued to a quick recovery.

Case 2806.—W. H., aged 21. A severe case of chronic rheumatism which had existed for months. Brought to the institution by his physician. He was anæmic and much emaciated, weighing but 100 pounds. Pulse 120, temperature 101°. Only able to take a few steps with much suffering, and that with the aid of a stout cane. There was enlargement of both knees and ankle-joints, and the synovial membranes distended by effusion. After three months he was restored to health, having taken two treatments daily, and gaining in that time seventeen pounds in weight.

Case 3375.—Mrs. J. F. Y., aged 40, was brought to the institution helpless from a severe attack of acute rheumatism. Any motion of the limbs caused intense pain. After one week of daily treatment she was able to go to and from her room unaided, and improvement continued till at the end of two months she was in better health than she had been for years before.

The one thing most prominent in the treatment of rheumatism by the Turkish bath is the fact that it works in consonance with every physiological law, and that it tends only to place the system in harmony with itself. When we se-

cure a harmonious interchange and natural action of every function, we have the highest condition of health that the individual is capable of attaining.

Inasmuch as rheumatism is all-pervasive and all-prevalent, and the Turkish bath is its most perfect antidote, the more we spread the knowledge of its good work and help to popularize and promote its general adoption, the more we help on the better time coming, by adding to the length of days of man.

SOME NOTES ON THE NAILS.

Read in the Section of Dermatology and Syphiligraphy, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA, PA.

In the early days of the world, before man had learned to utilize the stores of nature, the nails were of far more importance than at present. As the first weapon of attack and defense, the first implement of digging in the soil, or cutting or preparing the food, a healthy finger nail was one of the necessities for a healthy existence.

Even at the present time, they are of the utmost importance as an ornamental and useful appendage of the skin.

They preserve the delicate and sensitive nerves of the posterior terminal portion of the fingers from contact with irritative substances. They protect the sense of touch in the tips of the fingers from becoming dull by constant contact and perform a thousand other useful offices. It will thus be seen that attention to their health is of paramount importance. Fortunately for both physician and patient, diseases of the nails are comparatively limited in number. This is due to the fact that they are composed entirely of flattened epithelial scales which contain neither blood-vessels or nerves. They are, therefore, practically precluded from being the subject of either inflammation or neuralgia. They are, of course, liable to all forms of external injuries, but unless the injury extends to the structures beneath or adjacent to them, the result is not serious. The treatment of wounds or injuries to the nails is in fact a treatment of the structures which are wounded or injured at the same time. If the nail alone is fissured or broken or torn, there can be nothing done except to trim the surface down and wait for all trace of the injury to grow out, as it will do in all cases except when the matrix or root of the nail, is destroyed.

In that event the nail will not be reproduced, but the integument will become hard and cicatricial like.

One of the diseases with which the nails are liable to be affected and to which I wish to refer,

is known as onychogryphosis, or hypertrophy of the nails.

This disease consists of an abnormal increase of either, or both, the length or thickness of the nail. It is due to an excessive proliferation of the cells of the root. It may be uniform, affecting the whole nail, or only certain portions. In the form most usually observed the hypertrophy or excessive cell deposits occur principally in the central portion of the toe nail, elevating it there and producing an upward curvature. As a result the edges of the nail are depressed, and forced into the soft structures of the toe, producing more or less irritation and inflammation. In neglected cases the inflammation may lead to very serious consequences, requiring, at times, excision of the entire nail. This form of the disease is generally the result of prolonged pressure, as from tight fitting shoes, and is seldom observed anywhere except in the nails of the toes, especially the big toes. It is sometimes observed on the fingers in persons who from their occupation, or in obedience to fashion, are in the habit of wearing tight-fitting gloves. Idiopathic cases sometimes occur as the sequelæ of rheumatism, scarlet fever and other diseases. This is, however, rarely noticed. The treatment of hypertrophy of the nail consists in removing the cause of the disease, and restoring the natural condition of the parts.

No remedies will do any permanent good if the cause be allowed to continue. If, as is usually the case, the disease is limited principally to the nail of the big toe and the adjacent soft parts, the patient must be ordered to remove the pressure, by either cutting out a piece from his ordinary foot covering, or to discard it for a slipper, until cured. When this is done the edges of the nail will no longer be forced down into the sensitive inflamed flesh, and relief will be given at once. The free edges of the nails should then be trimmed down as close as possible, and a mild sedative and astringent ointment applied to the painful parts. One of the best applications is a 5 per cent. ointment of the oleate of tin, or if there be much inflammation a 10 per cent. ointment of the oleate of lead.

Another excellent application is tannic acid 1 part, bismuth sub-nitrate 1 part, adipis 12 parts. If there be much pain 5 grains of powdered opium should be added to each ounce. In some cases the best results are obtained from applying pure carbolic acid directly to the raw surface. A momentary burning sensation is produced, which is quickly succeeded by entire relief from pain. A solid stick of nitrate of silver may be used to accomplish the same purpose. Another analgesic ointment is composed of salicylic acid 20 grains, ext. belladonna, 10 grains, adipis 1 ounce. In chronic cases, where the surface remains raw for days after the pressure

has been removed, reparative action can usually be promptly produced by abandoning the use of ointments and dusting the surface with powdered cinchona bark, or pure tannic acid, or oxide of zinc, or bismuth sub-nitrate. If the nail remains thick, or continues to increase in thickness after the removal of all sources of pressure or irritation, its surface should be softened by frequent applications of liquor potassæ, and then gently scraped with a knife or abraded by a file until it returns to its natural condition. Nightly applications of salicylic acid ointment or plaster over the nail are also serviceable.

Internal medication is seldom required unless the pain be extremely severe, or there is some constitutional disease present. In the former instance, full doses of morphia are indicated to allay pain and procure sleep. In the latter case appropriate anti-syphilitic, anti-strumous, anti-rheumatic or other needed remedies should be freely given. If the hypertrophy is due to parasitic infiltration, it may be necessary to destroy or remove the greater portion of the diseased nail surface.

SOME ABNORMAL CONDITIONS DUE TO REFLEX NERVE ACTION.

Read before the Spokane County Medical Society, July 3, 1890.

BY R. L. THOMSON, M.D.,

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My purpose in reporting the cases detailed in this paper, is to give some additional testimony as evidence of the importance in practice, of keeping constantly before us one of the first principles in the treatment of disease, namely, the removal, so far as possible, of the cause of every abnormal condition that we are called upon to treat.

Disease in its various forms exhibits so many phenomena for which we can find no adequate cause, it is not a matter of wonder that we at times fall into a routine practice of treating symptoms.

At the same time, we are justly proud of our superior methods of diagnosis that have enabled us to acquit the liver of many sins of other organs; to stop some supposed "consumption coughs" by checking the discharge from the posterior nares; to relieve many cases of so-called fever by evacuating pus cavities in various portions of the body, and in a hundred other ways to alleviate suffering, and cure patients who would have been left by our predecessors, to endure the pain and discomfort, and in some instances to perish.

It is safe to assume, as a fact, that there is no effect without a cause, and my experience justifies the belief that there is more to be learned of the etiology of disease than has yet been made known to us. The scarcely less than marvelous advances made in the past few years toward reducing the practice of medicine and surgery to a science, should stimulate us in our exertions to achieve new successes.

Cases of vesical tenesmus due to fissure of the anus; of intense pain in the knee due to arthritis of the hip-joint; of pain under the shoulder-blade from abscess of the liver; of cough due to gastric irritation, and many other forms of reflex nerve action are familiar to us all. The cases which I now report are of a similar nature though not so generally understood by the profession.

Case 1.—Miss M. G., æt. 18, applied to me for something to strengthen her eyes. She stated that frequently while walking in the street, or sitting in the theatre, hot tears would flow almost in a stream down her cheeks. I made a careful examination of her eyes and found that they were perfectly healthy, and her vision was normal in each. The mucous membrane of her nose was somewhat hypertrophied and hypersensitive. By making applications to this membrane, I stopped the excessive lachrymation.

Case 2.—Miss K. M., æt. 24, was brought to my office by a physician. Her vision for distance was $\frac{2}{3}$ or less than one-half that of normal. As seen by her, the smaller letters on the test card were so blurred that she could not make them out. She read diamond type on a card held in her hand, but said that if at any time she continued such exercise longer than a minute or two, the letters ran together, and a severe headache was sure to follow. For eighteen months she had scarcely known what it was to be without a headache, which at times was so severe as to cause her to keep her bed. An ophthalmoscopic examination showed her eyes to be emmetropic, and they were absolutely free from disease. I examined her ears, and there was nothing wrong with them. She stated that she had no trouble with her nose, but upon inspection I found the right nasal passage plugged by hypertrophy of the tissue covering the turbinated bones. With instruments, I opened the occluded nostril. From this time on my patient had no headaches. At the next visit to my office she read $\frac{2}{3}$ with each eye, and stated that she could use her eyes for reading, writing and sewing, for as long a time as she wished. Some months later when I saw her last, there had been no return of her trouble.

Case 3.—D. R., æt. 30, applied to me for glasses. He stated that each day on his return from a morning ride in the Park, the left sleeve of his coat was wet with water from his left eye.

The lachrymal passages were not closed, as there was no overflow of tears except while out riding. I could find nothing about his eye to account for this annoying symptom. The mucous membrane of his nose was hypersensitive. I treated the nose and the excessive lachrymation ceased.

Case 4.—Miss V. B., æt. 20, was brought to me by her physician, who stated that he had been trying for some months to build up her health, but that his remedies had failed. The patient had been subject to headaches for many months. Her lips had scarcely more color than her anæmic-looking face and hands. Her tongue was coated and her appetite bad.

I found her vision in the right eye to be $\frac{1}{2}$ or better than that of the average good eye. Vision of left eye was $\frac{2}{3}$ + or somewhat less than that of the average good eye. I placed her eyes under atropia and found that the right eye needed no glass; the left required a plus cylinder of one-half a dioptre, which brought the vision up to $\frac{2}{3}$. Over the right eye I placed a plain glass; over the left, the weak plus cylinder. From the day on which my patient began to wear these glasses, she had no more headaches, and in a short time she was restored to perfect health.

Case 5.—I was called in consultation to see J. L., æt. 19, who was unable to raise the upper lid of his right eye. He stated that three weeks previous to the time of my seeing him, while working around a wheat thresher he had felt something strike his right eye. The next day he applied to a physician, who treated the case as one of conjunctivitis. At the end of two weeks, the patient found that his eye was not getting well, so he consulted another physician, who everted the lid, but not finding a foreign body concluded that the ptosis must be due to a tumor in the cranial cavity. Upon examining the patient, I found some œdema of the lid, and that it could be everted only with great difficulty. There was a local conjunctivitis in the upper cul-de-sac. The ptosis was due to a tonic spasm of the orbicular muscle of the eye, which in turn was caused by some peripheral irritation. Had the drooping of the lid been due to paralysis of the nerve supplying the elevator muscle of the lid, I would have met with no resistance when I attempted to evert the lid. The symptoms seemed to clearly indicate that there was a foreign body either in the upper cul-de-sac or in the substance of the upper lid. I wrapped a small piece of cotton around a probe, dipped it in warm water, everted the upper lid and swept the entire length of the cul-de-sac twice. The second time, I brought away a piece of a beard of wheat, about half an inch in length. The patient experienced immediate relief, and his ptosis was instantly improved. I did not see him again, but I am quite sure he made a good recovery.

IMPERFORATE AUDITORY CANALS.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY SETH S. BISHOP, M.D.,

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American medical books on the ear contain so little on the subject of congenital and traumatic anomalies of the external auditory canal, that it seems fair to infer that they are of uncommon occurrence in this country.

Only the following four cases of complete and permanent imperviousness of the external meatus have come under my observation during a practice of fourteen years, eight of which have afforded me quite a respectable experience in hospital and dispensary work.

Case 1 was a man 32 years old, who applied for treatment August 15, 1883. Several years previously he had been run over by a railroad train, that severed the auricle from the head. The surgeon in attendance is said to have had no hopes of the man's recovery, but sewed the auricle to the side of the head, to make the subject appear more presentable at his funeral. The result was that union of the parts took place in such a manner as to completely close the external auditory canal, and deprive the patient of any use of that ear. However, the fact that the auditory nerve had retained its integrity was established by a careful application of the hearing tests. I therefore cut away the scar tissue sufficiently to obtain a channel of nearly the natural size. There was only a slight discharge following the operation, and when the patient left the city for his home two weeks later, his hearing in that ear was good for ordinary conversation.

The result showed that the drum and auditory nerve had been uninjured by the accident, and nothing was needed to restore the usefulness of the organ beyond opening the door for the admission of sound.

Case 2.—A girl 8 weeks old was brought to my clinic October 10, 1885. There was a congenital deformity of one auricle, and absence of the external auditory meatus of the same ear. The auricle was rudimentary, and doubled forward upon itself. It appeared shrunken and pinched, and had a large, hard nodule and several indentations in that part of the helix that corresponds to the key-stone of an arch.

It is interesting to note, in this connection, that the mother attributed the deformity of the auricle to the fact that, about the fifth month of gestation, her elder child bit the mother's ear severely, at just that point that corresponds to the greatest auricular deformity in the baby.

At the point where the canal ought to have been, there was a depression or cul-de-sac that yielded to pressure, and imparted to the touch an

impression as if there were an opening in the bone beneath.

Four months later, careful tests led me to believe that the child could hear with that ear. I operated to correct, as far as possible, the deformity of the auricle, and to ascertain if there were any bony meatus. On cutting down into the cul-de-sac where the canal should have been, I found nothing but a depression in the bone. No bony canal could be found, and I did not consider that further operative interference would be justifiable. However, I maintained a sufficient opening to give quite a respectable appearance of an external meatus.

Case 3.—An infant 14 months old, healthy and apparently normal, except in respect to one ear. There was no opening where the external canal should have been, and, although the patient appeared to hear on that side, the parents were unwilling that an exploratory opening should be made. I saw the case several years ago, but have never heard from it since.

Case 4.—Locomotive engineer, 32 years old, was referred to me through the courtesy of Dr. Fitch, of Rockford, Ill. When 3 years old he was run over by a wagon, that detached the auricle and tore off part of the cheek. The auricle was stitched over the meatus, and completely closed it with dense fibrous tissue. The patient stated that he had never since been able to hear with that ear, but the tests showed that the nerve was sensitive to sound.

About ten years ago, he suffered intense pain in the ear for two weeks. This was followed by a purulent discharge from a pin-hole perforation in the adventitious tissue at the highest point of the mouth of the external meatus. The discharge had continued ever since, being copious and malodorous. The exit for pus was so minute that accumulations produced considerable pain. At such times he pressed above and in front of the ear, and alternately pulled and pushed the auricle in a sort of pumping process, to work the pus out. He succeeded in this manner, and by the aid of the Valsalvan experiment, in evacuating the pus cavities.

I operated by means of the paracentesis needle, followed by a triangular-shaped bistoury. The meatus was filled with tough cicatricial tissue for about three-fourths its depth. After opening up the canal and cauterizing it with chromic acid, I inserted a vulcanized rubber tube, and retained it in position by antiseptic dressings.

After the operation he could hear my watch 1 inch, and ordinary conversation 11 feet distant. After several treatments with the Eustachian catheter and external applications, the patient resumed his occupation. When he returned again the canal had contracted, and granulations had extruded the rubber tube by one-half its original insertion. Under a 10 per cent. solution of cocaine I curreted

and cauterized the canal, and recovered the ground lost. Subsequently, however, the same experience was repeated, and the canal was allowed to close; but by this time the discharge had diminished to a few drops in the twenty-four hours, and the foul smell had disappeared.

I had already begun dilating the old perforation. Through this I could pass a probe upward into the mastoid cells, and inward parallel to the roof of the external meatus, to the tympanic attic. I proposed a more radical operation for the excision of all the occluding tissue, which would enable me to discover and remove any carious bone that might be present; but he was so well satisfied with the almost complete cessation of the discharge, that he refused, and returned to his vocation.

We found that after dilating the original opening, he retained his hearing nearly, though not quite, as well as it was through the tube.

The remarkable circumstance in this case is, that the perceptive apparatus and the conducting mechanism should retain their functions after twenty-nine years of apparent disuse. But I apprehend that, although the patient was unconscious of any hearing power in this ear, it was sufficiently responsive to sound-vibrations of a major character to give the conducting apparatus exercise, and to keep the nerve sensitive. The nature of his business lends color to this view, for its environments abounded in vibrations which would be imparted to every organ in his body. If anything in nature is calculated to arouse a dormant auditory nerve, I should imagine that nothing but Gabriel's trumpet would surpass the clanging of bells and the tooting of whistles.

Some of our authorities speak of imperforate external auditory canals as though they might be of frequent occurrence; but among the records of the Illinois Charitable Eye and Ear Infirmary at Chicago, embracing more than 8,000 cases of diseases of the ear, I find but one case of closure from exostosis, three cases of congenital absence of the meatus, and three of traumatic closure. Of course, we have found numerous cases of narrowing, and various irregularities of the canal, from causes that are not uncommon.

A reference to the following authorities will bear me out in my inference that congenital and traumatic anomalies of the external auditory canal are infrequent in America:

Roosa mentions the occurrence of congenital absence of the canal, but does not treat of traumatic closure. He records no operations to form an external meatus.

Burnett speaks of the possibility of closure, but cites only membranous and osseous formations as the cause. None of my cases were of that kind, two being congenital and two traumatic.

Green's edition of Schwartze speaks of congenital atresia, or imperforation, and stenosis, or con-

striction, of the canal, as "specially frequent."

Turnbull mentions congenital absence of the meatus, rudimentary auricle, and exostoses, but not as being frequent.

Mittendorf does not treat of the subject.

Jones also ignores it.

Pomeroy does not deal with the subject, although he mentions exostoses.

Sexton's book on the ear is silent on the subject.

Von Troeltsch has seen congenital absence of the meatus, speaks of the difficulties of operation, and discourages it, unless one can with certainty find the bony canal.

Buck has nothing on the subject, but mentions membranous closures.

Congenital cases have been reported by the following authors: Moos, Knapp, Jäger, Welcker, Robb, Hessler, Zaufall, Steinbrügge, Zuckerhandl and Michel.

Politzer's classical work on the ear advises an "operation in congenital atresia of the external auditory meatus only when it has been with certainty ascertained, by careful examination, that it is a case of congenital thin-walled septum at the entrance to the ear. When the atresia extends far inwards, so that the canal cannot be made out, or only a solid cord, operation must be avoided, as irrational and dangerous.

Virchow's Archives, Bd. 30, S. 221, and Bd. 32, S. 518, says: "Congenital anomalies of the external ear and its neighborhood are to be referred to early disturbances in the closure of the first branchial cleft, and are often associated with fistulæ of the other branchial clefts, cleft palate, and other forms of arrest of development in the facial bones—as, for instance, with unilateral atrophy of the face."

70 State St.

MEDICAL PROGRESS.

TOXICITY OF BORIC ACID.—By some authors boric acid is considered not more toxic than table salt, and it has been extensively employed as a disinfectant in the preparation and canning of foods. That it is occasionally poisonous has been recently demonstrated in the journals, and now we have the communication of DR. G. LEMOINE (*Gazette de Paris*) describing four additional cases.

The first case was that of a paralytic, with a bed-sore that was dressed with a powder containing boric acid; on the fifth day there appeared an eruption which gradually covered the whole body. The temperature rose, pulse frequent, severe headache, sleeplessness and delirium, with vomiting. After changing the dressing there was improvement in all the symptoms, and at the end of the sixth day the eruption had disappeared. After some days the boric acid was again employed,

and was followed by similar symptoms that disappeared after its discontinuance.

Dr. Vincent describes two similar cases, in one after washing out the pleural cavity with a 4 per cent. solution there was vomiting, urticaria, delirium; these symptoms disappeared when the cavity was cleansed with pure water, and returned when the boric acid was again used. In the second case, one of bladder operation, the boric acid caused similar poisonous symptoms, but without the vomiting and urticaria. In another case, a laparotomy (Prof. Dubar), severe poisonous symptoms developed, with an erythema of the abdomen and thighs, that lasted twelve days. There was also faecal incontinence. The pulse and temperature were not materially altered.

It is noteworthy that the first case had chronic heart trouble and interstitial nephritis. The last case also had albuminuria. This may be the possible explanation why poisonous symptoms are so rarely noted in the use of boric acid. By the healthy kidney it is rapidly eliminated, but when they are diseased it accumulates in the system and causes poisonous symptoms.

ASEPTIC OPERATIONS. — FRITSCH (*Deutsche Med. Wochenschr.*) claims that the most important discovery in modern antisepsis is that carbolic acid and sublimate are not needed in fresh, clean wounds; that dirty wounds must be cleaned, goes without saying, but clean tissues are only injured by antiseptics. Fritsch has of late used only 0.6 per cent. sterilized solution of sodium chloride, in all operations, even the severer ones in the abdominal cavity. When this cavity is irrigated with solutions of carbolic, salicylic, or boracic acids, depressed heart's action and collapse frequently appear. A directly opposite condition is produced by irrigation with warm salt solution; indeed, this method may be used to prevent the more serious symptoms of surgical collapse.

RESECTIONS OF THE STOMACH AND INTESTINES. — At the recent Medical Congress, PROFESSOR BILLROTH read a paper on resections of the stomach and intestines. One hundred and forty cases were recorded which comprised the whole of those that had come under the Professor's own hands. The technique of the operation was scarcely alluded to, as it had already before been published. The plan of suturing adopted was that known as the Lembert or Czerny-Lembert plan, the latter being seldom adopted, whilst occasionally the plan had been adopted of inserting one piece of intestine into another. Practically about half the patients had recovered from the operation, though, as will be seen from the subsequent account, the mortality is far greater in certain classes of operations, and more particularly is this the case when the upper part of the small intes-

tine is affected. Of pylorus resections, about twenty cases had been operated on by him, half of which died from the operation itself. All of the cases in which this operation was performed were the subject of cancer, though some were far more favorable to operate on than others, as the disease was not at the time of operation very infiltrating in character, but was chiefly confined to one spot, where considerable ulceration had taken place. Where there was much infiltration of the surrounding parts, an operation was almost impossible. Of those that survived the operation, some four or five had lived in comparative comfort for a few months; two cases had survived from one year to a year and a half; one case had survived two years, and one was alive five years after the operation. Twenty cases of gastro-duodenostomy were recorded, one half of which had been performed by Wölfler's method (in front of the transverse colon), and one-half by Hacke's (behind the transverse colon). They had nearly all been attended by temporary success, which of course was all that could be expected. Of ten cases of resection of the small intestine with the formation of artificial anus, all recovered from the operation. On eight or ten occasions the caecum had been removed, but it was a difficult operation, and did not yield satisfactory results. It was best to insert the small intestine into the large after such an operation. In two cases of cancer of the descending colon he had attempted resection, but both had died. In the case of the rectum the results were remarkably good; none had died directly after the operation. In two instances a portion of the rectum had been excised, and the upper and lower end of the bowel brought together. Senn's plates had never been used by him on the human subject, but he had employed them on the dog, and was satisfied with their efficacy. — *British Medical Journal*.

TREATMENT OF DYSENTERY WITH INJECTIONS OF BICHLORIDE OF MERCURY. — LEMOINE (*Bull. gén. de Thér.*) has had an opportunity to treat 102 cases of dysentery in the military hospital of Oran. Fifty-four were treated with sublimate clysters, and only those who could not take calomel owing to some disturbance of the stomach; 21 with calomel, with a beginning dose of 1 gram followed in the next two or three days by smaller doses; 11 with ipecacuanha; and 16 in the beginning with ipecacuanha, and later, as it did no good, with mercury. No deaths were noted, and ordinarily 1 gram of calomel was sufficient to check the slimy and bloody stools. In 28 of the cases, the favorable results were immediate. The clysters, consisting of 200 grams of a 5 per cent. solution, were commonly retained about ten minutes, and worked rapid improvement in the tenesmus and slimy discharges. In some cases, owing to the sensitiveness of the anus, it had to be

painted with a solution of cocaine. In many cases the calomel was given in connection with the clysters. Poisonous symptoms were not noted in any case. The author refers the favorable action of mercury in these cases to its antiseptic power.

ON THE OCCASIONAL FAILURE OF CASTS IN THE URINE.—DR. ERNST SEHRWALD (*Deutsche Med. Wochenschr.*) says that occasionally cases present themselves in which a urine, rich in albumen, contains no casts. If the urine is examined in separate portions or each hour, it will be found that the different parts will differ in the number of contained casts. How is this difference explained? The one that naturally presents itself is that some portion of the kidney more involved than the balance, has secreted that portion rich in casts. If this were true, the amount of albumen would also vary, but this is not the case. The author thinks he has found the true explanation, in that the casts have been destroyed by the pepsin contained in the urine, it exerting its proteolytic action in the acid urine. The proportion of pepsin is always greater in the urine containing the less number of casts.

LATE SYPHILITIC INFECTION.—M. CHARLES MAURIAC communicated to the French Society for Dermatology and Syphiligraphy (*Annales de Dermatologie et de Syphiligraphie*) an authentic case of infection four years and nine months after the primary accident. He was consulted in 1885 by the patient and treated him for a primary lesion. The secondary symptoms were not marked and soon subsided, but for the next two years there were occasional appearances. At this time the patient expressed a strong desire to marry, providing that he could be assured that he would not infect his wife. At this time he occasionally had slight herpetic eruptions, and the danger of these, from an infectious point of view, was described. The patient had a fixed idea that he would infect his wife, but at the end of four years and nine months from the date of primary infection married. Unfortunately, his prediction proved to be true, for a short time after marriage his wife presented all the appearances of recent syphilitic infection—roseola, mucous patches, etc.

In the discussion M. Hardy said it was very difficult to fix a time with certainty, when a syphilitic would not infect a wife or child. Fournier placed the time at five years and over.

THE MEDICO-LEGAL ASPECT OF ABDOMINAL SECTION.—The technique of abdominal operations has attained so high a degree of excellence that it would seem that little remains to be accomplished to render it absolutely perfect. Unfortunately, the same cannot be said of our diagnostic resources in conditions of disease within

the abdomen, which are still far from being adequate. Every now and then we read of cases occurring in the practice of careful and skilled surgeons, where errors of diagnosis have led to the performance of abdominal operations attended sometimes with fatal results. If these errors have been made by men of acknowledged diagnostic ability, they are much more likely to occur in the practice of surgeons of less skill and experience.

It is therefore a matter of importance to determine how far the surgeon can be held responsible for these diagnostic errors, since the greed of attorneys and the avariciousness of the patient's relatives not infrequently place him in the disagreeable position of defendant in a civil or criminal law suit. At the last meeting of the American Medical Association two interesting and instructive papers were read by Drs. Vanderveer and Wile, on the subject of the "Medico-Legal Aspect of Abdominal Section," which are reported in the Journal of the Association. Dr. Vanderveer states that in the trial of medical men for malpractice, charges to juries have been uniformly that gross neglect or gross ignorance, or both, must be shown on the part of the prosecution, beyond a reasonable doubt, before conviction can be had. It should be borne in mind, however, that it is impossible to make precise distinctions between negligence and ignorance, and gross negligence and ignorance; for that which under some circumstances would be ordinary skill, in other circumstances would be ignorance, and in still other circumstances gross ignorance. The responsibility which the surgeon should assume in the class of cases under consideration is well stated in Dr. Wile's paper: "Laparotomy to-day is, in skillful hands, a recognized operation, and there are certain conditions of disease or accident which can be reached only through abdominal section. The surgeon must be certain, as far as possible, from his diagnosis, that a given condition, or conditions, warranting exploration, exist. He ought to be accurately informed as to the correct method of reaching the parts through operative interference. He should know just when the operation ought to be performed in order to obtain the best, or safe results. Beyond this the responsibility lies with the patient or patient's friends. They should be informed of the danger of the disease as it exists unrelieved; they should be informed as to the gravity of the operation, and its risks, and they should be warned that in the event of unfavorable result, either through failure of the vital powers to stand the shock, or from a too great extent of diseased parts to permit successful manipulation, or even in the case of a possible mistaken diagnosis after sufficient consultation has been had, the doctor shall not be blamed."

It is an unfortunate fact that suits of malpractice against surgeons are tried before juries of

laymen, who are unacquainted with the mere rudiments of the surgical art. Moreover, the prosecution is frequently permitted to adduce, as expert testimony, the opinions of men who have never performed a surgical operation of magnitude, and who are perfectly ignorant upon the subject on which they are asked to testify. The experts testifying in these cases should be appointed by the State, and selected from among men of acknowledged surgical skill and ability. By the adoption of some plan like this the accused party would be certain of a fair and impartial investigation of the points at issue. However comforting the reflection may appear that the unjust decisions of juries are usually reversed by the superior courts, it must not be forgotten that the accused surgeon has been subjected to a large expense and loss of time, not to leave out of consideration the anxiety and worry inseparable from every law-suit. And we would heartily re-echo the sentiment expressed by Dr. Vanderveer, that the laws should be so modified that surgeons may have better protection in the recovery of time, for expenses they have been put to, when it is proved that the case was urged by some disreputable lawyer, or by those personally malignant, within or without the profession.—*International Journal of Surgery.*

EFFECT OF OPERATION WOUNDS ON THE HEART.—DR. J. TANSINI has made a number of experiments on animals with a view to determine the effect upon the heart's action of operation and other wounds of the skull, the pleura and the abdomen. In operations of the skull he finds that the heart is less affected by the use of the trephine than by that of the chisel. The latter may, however, be employed with impunity even upon a skull that is still entire, if an instrument of small size be used, and if it be inclined at an angle of 30° with the surface. When an opening has already been made into the cranial cavity, the use of the chisel appears to exert no disturbing action on the heart. A plug outside the dura mater is much more prejudicial than one applied directly to the brain substance. Venous hæmorrhage can always be arrested by the latter without any serious interference with the heart's action. Washing out the lateral ventricles produces but little effect on the heart if there is a free exit provided for the liquid. Ten experiments were made on the pleura, from which it appears that an opening of either the right or the left thoracic cavity has a very serious effect on the heart, causing at first irregularity and subsequently diminution of the movements. Continued washing out of the cavity with cold water at 11°C. , or even at the body temperature, slows the heart to a more marked degree, and causes the animal to die more rapidly. The various antiseptic solutions do not appear to behave differently from plain water, with the ex-

ception at least of those that are definitely poisonous. Wounds of the abdomen, producing prolonged irritation of the abdominal nerves appear to slow, and ultimately to arrest the heart's action.—*Lancet.*

HYPNOL OR MONOCHLORAL-ANTIPYRIN.—DR. SCHMIDT, of Nancy (*Les Nouveaux Remèdes*), presented to the Biological Society his observations upon two new compound substances—the monochloral-antipyrin and bichloral-antipyrin. As a soporific he found that 1 gram of the former was equal to .55 gram chloral, and the latter to .60 gram. Both substances produced a fall of temperature, the bichloral being more energetic than the mono. Their action upon respiration was not sensibly different from that of chloral hydrate. They diminish the force and frequency of the heart's action, but to a less degree than chloral hydrate administered by the stomach. Both substances are toxic, due to their contained chloral. Monochloral-antipyrin has several advantages over chloral hydrate, as it is easier taken, and soporific effects are obtained with a minimum disturbance of the heart and circulation. The question of the analgesic property of these drugs was distinctly reserved.

DISINFECTION OF THE HANDS.—BALL (*Deutsche Med. Wochenschr.*), has studied carefully several methods, and has come to the conclusion that that recommended by Miculicz is the safest and best. It consists essentially in: 1. The removal of visible dirt from the finger-nails with knife or shears. 2. Then the hands are washed and brushed for three minutes, in warm water with potash soap. 3. One-half minute in 3 per cent. carbolic acid solution, and then rinsed in a 1:200 sublimate solution. 4. Lastly, the space under the nails and the root of the nail are rubbed with damp iodoform gauze for about one minute.

Ball has made some experiments with pure cultures of the staphylococcus aureus, with which he infected his hands, and then applied this method. The results showed that it was a certain means of sterilizing the hands, it being a matter of indifference whether they were previously infected or not.

PILOCARPINE IN DERMATOLOGY.—DR. H. G. KLOTZ, of New York, in a paper read at the annual meeting of the American Dermatological Association, on the 2d inst., gave a review of the history of pilocarpine in dermatology. The author had employed this remedy in a few cases, including some of eczema, pruritus of the anus, and affections with dryness and irritation. The result had been such as to encourage him to give it a further trial. It might be given internally or by hypodermic injection, small doses, long continued. A tenth of a grain was likely to prove sufficient to keep the skin moist.—*Boston Med. & Sur. Jour.*

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THE TREATMENT OF SYPHILIS.

This always interesting topic was discussed at the recent International Medical Congress at Berlin, with the result of but little new information being added to our knowledge of the subject; although a review of methods of treatment and a comparison of results obtained, is not without value to new workers in any branch of medical science.

DR. M. H. LÉLOIR considered that the physician was justified in excising the primary syphiloma: 1. When the chancre was seen at its commencement; 2. When the chancre was situated where excision was easy and without danger (labia, prepuce, etc.); 3. When it was not yet accompanied by adenopathy; 4. When a unique chancre, or several chancres, could be removed easily; 5. When the patient was not diabetic, albuminuric, etc. Excision may be a means of aborting or of attenuating syphilis; and the facts on which these statements rest are sufficient to prove that, contrary to well known opinion, the chancre is not the first of the secondary accidents, and does not introduce the infection into the system but, in reality, produces it. Where excision does not abridge infection it may be because it is insufficient, and does not remove the entire area of sclerosis. Specific treatment should not be commenced until the appearance of the secondary symptoms, because the diagnosis of primary syphiloma is not always an easy thing; and to preventive treatment in the beginning may be ascribed the non-appearance of secondary symptoms, so

that certain patients—believing themselves syphilitic—affect their health by using mercurials and iodides, while others—actually syphilitic—totally neglect treatment. His statistics of cases treated with mercury *ab initio*, and of those treated on the appearance of the secondary symptoms, show that late accidents have not been more frequent in one class than in the other; in fact, some of the most refractory cases of cutaneous and mucous syphilides were in patients placed on mercurial treatment when the chancre appeared. The chancre should be treated locally with VIGOS' plaster, of the French codex, or the emplastrum hydrargyri of UNNA; with lotions applied twice a day. From 2 to 4 grams of mercurial ointment are applied for fifteen days, then an interval of from fifteen to twenty days is allowed to pass, and this alternation is continued for a year. Certain rebellious cases of cutaneous syphilis may need general baths, containing 7 grams of bichloride of mercury. Hygiene of the mouth, general hygienic and tonic treatment, and occasional trips to the country or seashore, are required. During the second year the frictions are given for ten days, at intervals of from three to six weeks; and if there is freedom from syphilitic symptoms the inunction may be used, during the third and fourth years, only in the spring and fall. He avoids mercury internally whenever possible, on account of the digestive trouble it may cause; while he uses it hypodermatically only in hospital cases, because such patients neglect their medicine.

DIDAY gives $\frac{1}{2}$ gr. of protiodide of mercury three times a day, with iron and iodide of potash in anæmia. He believes things proscribed are more important than things prescribed. DRS. SCARENZIO and LANG use hypodermatic injections of mercury; while NEUMANN conservatively holds the necessity of considering the individual conditions and following an active case by preventive treatment, or by symptomatic treatment, or by intermittent treatment, continued no longer than two years.

It seems to be agreed by the participants in the discussion that excision of the chancre may, at least, attenuate the disease; this experience has not been corroborated by American syphiligraphers, and we believe is but rarely practiced in this country. So with adenopathies; excision of the glands does not obliterate the many lymph channels that are conveying the syphilitic poison.

The consensus of opinion seems to be that there is no advantage in commencing treatment until the secondary infection is manifest; a conclusion that is generally practically applied among us. But the hypodermatic treatment has not as yet been generally adopted, largely on account of the intolerance of patients; and inunction has the disadvantage of uncleanliness, aside from its liability to cause skin affections, as well as uncertainty of dosage of mercury absorbed. As VIRCHOW has said, the treatment that is best tolerated may be dangerous; and in nothing, more than the treatment of syphilis, is eternal vigilance on the part of the physician the price of the patient's liberty from tertiary manifestations of disease.

THE INFLUENCE OF NEWSPAPERS ON THE HEALTH OF THE COMMUNITY.

At the late meeting of the Social Science Association at Saratoga, DR. F. W. RUSSELL, of Winchendon, Mass., read a paper pointing out the evils of sensational descriptions of crime and accidents in the daily press. He asserted that minute descriptions of crime were an educational power to weak minds to commit similar acts in the same way. This was proven by the similarity of particular crimes, that had been minutely detailed in the daily press. In one instance a suicide had devised an ingenuous apparatus for hanging. This was given in sensational detail by a daily paper, and within a few months four similar cases were noted in which the same apparatus were used, showing that they had been copied from the first description.

Many similar instances will be apparent to any one who studies the histories of crime as given in the daily press, especially if it has attracted much attention. The similarity of detail as to method and manner of execution, shows that the press has educated the criminal and pointed out the methods of committing the crime.

The sensational descriptions of cyclones was mentioned as particularly dangerous to a certain class who, on the approach of any storm, gave way to the most morbid impulses of fear and alarm. The most alarming symptoms of nervous prostration followed the appearance of any approaching storm, that resembled the description given in the papers. In cases of accidents the doctor had noted a marked change in the health

of persons who had read the details minutely.

In asylums the influence of these sensational accounts were exceedingly dangerous, and all such papers had to be excluded. The effect on the mind of comparatively healthy persons of the sensational details of crime, and casualties, was always bad, and especially on nerve exhausted and defective brain organizations.

To young persons it is practically worse and more disastrous than obscene literature or pictures. The morbid impressions it produces and shock to the higher nerve centers, leaves a permanent enfeeblement that is traceable. The cheap novel, however sensational, was more or less unreal to the reader, and could not enter so minutely into his daily life, but the newspaper accounts of atrocities were accepted as positive histories, that roused, excited, and became a large part of the thought of the reader for the time, forming naturally a degree of education to govern all future conduct.

Some very interesting illustrations were given of the effect of journalistic sensationalism and its far-reaching disastrous effects on all communities. The doctor concluded that the remedy was to appeal to the press to publish no details of crime, and thus raise the tone of its readers, and also to withdraw all patronage from papers of sensational character. The comments on this paper by the press have been in most instances very kindly. The defense was that details of crimes and accidents are demanded by the public, and this publicity has a deterrent influence in most cases, preventing crime for fear of publicity. It is evident that many of the cheap sensational dailies are not only bad but dangerous in their influence on the minds of the readers. The morbid glorification of criminals is the direct result of minute exaggerations of his life and crime. The same detailed accounts of his crime create an air of superiority that is fascinating to many minds. It is also evident that medical men have a duty to correct and educate public sentiment in this regard. There are mental influences at work in all communities that are as potent for harm as poisonous germs, and the physician should be the counsel and adviser.

Dr. Russell's paper suggests a new field of study and observation. If it can be shown from facts gathered over wide sections of country, that detailed histories of great crimes stimulate crime of like character, as in the case of the "James boys,"

a remedy for the evil is demanded at once. It is asserted that a history of the "James gang" has produced several similar organizations, whose depredations were such close imitations, as to suggest the inspiration from this history alone.

The effect of any horrible event, when given in detail, on the minds of the community opens up a wide field of psychological study of great interest. The observations and conclusions reached by Dr. Russell, have been made before, but they came to-day with peculiar interest, and have a larger significance than ever. Sensational journalism has attained great proportions, and the dime novel and trashy story is put in the background. How far does this journalism influence public health? How far does it cultivate crime, and morbid mental states, dangerous to the community? How far does it stimulate disease and disease conditions? How far does it pervert and damage all healthy mind and brain growth?

These are only a few of the questions which the profession should be prepared to answer.

EDITORIAL NOTES.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—In previous issues of *THE JOURNAL* we have called the special attention of our readers to the fact that the next annual meeting of this prominent medical society will convene at Louisville, Ky., on the 8th of October. The medical profession of that city have made every possible provision for a most successful meeting. Special arrangements have been made at the hotels and reduced rates have been secured on many of the railroads, and we shall be greatly surprised if the medical men of the Mississippi Valley and their friends from less favored regions are not largely represented in that meeting. The very efficient Chairman of the Committee of Arrangements is Dr. I. N. Bloom, of Louisville, who will be glad to render any needed service or information.

A CORRECTION.—Referring to the cause of the death of the late Dr. Robert Stephenson, of Adrian, Mich., while in attendance at the Medical Congress at Berlin, the associated press seems to have been guilty of a serious misrepresentation. So far from being true that he died from an "overdose of morphine," the facts, as the result of careful post-mortem examination, reveal that he died from cerebral hæmorrhage from a rup-

ture vessel in the pons varolii. A sensational report should never attach to a name so fair and so honored as his, and the press, if it be not more discreet in the selection of its correspondents, is guilty of a crime.

A WORLD-WIDE BROTHERHOOD.—It is a significant fact that medical science knows neither geographical boundaries nor national restraints. Millions of men may be under arms for the preservation of international peace, and yet the devotees of medicine from every land may meet in any domain, and under any flag, heartily reciprocate the kindest courtesies, and labor as brethren in a common effort for the alleviation of human ills, receiving on every hand a heartfelt welcome.

To the honor of the medical profession be it said, that the world has never seen such another manifestation of international comity as has just been witnessed at Berlin. The representation from all the principal nations was such as to command profound respect everywhere, and the influence upon the nations represented must have its beneficial influence. The courtesies awarded by the Germans to their French visitors will be sure of a generous response; America will surely be accorded a name and a place upon this planet, and the fact that the centre of medical achievement seems to be nowhere, and that its circumference is everywhere, will lead the way to more and more generous recognition of *genuine* work and worth regardless of clime or previous condition.

One of the mighty agencies for the unification of the nations will be the unification of their medical men. The international congresses are simply heralding the advance.

THE SANITARY CONDITION OF CAIRO.—The want of proper action on the part of the British Government with reference to the sanitary condition of Cairo is being severely criticised. The Internal Board of Health, appointed some seven years ago, seems to have accomplished little or nothing in the way of sanitary improvement. Its water-supply is said to be filthy, and a heavy death-rate prevails at the Egyptian capital. Cholera prevails in the city, and at neither of the quarantine stations, where pilgrims are detained, are adequate provisions made for the patients themselves, or for preventing the further spread of cholera in Egypt. Favoritism and nepotism are said to be responsible for the neglect. Expert

service is demanded at such a crisis as this, and no time should be lost in the correction of such a criminal neglect. The British government owes it to herself and the world to place the City of Cairo under the best possible sanitary surveillance, and that at once.

DEATH OF DR. VON JELENFFY.—This distinguished Hungarian laryngologist became suddenly sick after attending but a single session of the Congress at Berlin, and has since died. Most of the members of the Section on Laryngology who remained in the city were in attendance at his funeral, at which Dr. Fraenkel, the president of that Section, presided.

HIPPOPAGY IN BERLIN.—The *Lancet* says: "It is stated that, in compliance with the public wish, a horse-meat restaurant has been established at Berlin, wherein a large trade is carried on." It seems remarkable that the meeting of the Medical Congress should so soon be followed by a meat famine.

MURDER OF THREE PHYSICIANS.—According to a Dalziel's telegram from Madrid, dated the 27th ult., the physicians at work in the cholera-infected districts continue to receive ill-usage from the peasants, who are opposed to the precautionary regulations upon which they insist. Notwithstanding that the physicians are provided with military escorts, they are still subjected to violence. In Valencia a physician has been killed by a stab in the back; at Mogente another doctor had his head split in two by a hatchet wielded by a woman; while a third was set upon and killed by an infuriated mob near Lerdo.

ADULTERATION LAWS IN RUSSIA.—The Russian government has recently enacted some very stringent laws against the adulteration of food and drink. Any person guilty of adulterating any article of food will be liable to a fine of \$200, or imprisonment for three months, for the first offense, double this penalty for the second, and deprivation of all rights as a citizen for the third. What a sweeping revolution would follow the enactment of such a law in the United States. As a question of profit and loss, it would be simply stupendous.

DEDUCTIONS FROM EXPERIMENTS WITH DRUGS.—The *Progrès Médical* states that Dr. Huchard

recently read a paper on "The Physiological and Therapeutical Action of Drugs" before the *Société de Thérapeutique*, calling attention anew to significant differences in the action of certain drugs in the well and in the sick and in various forms of disease. For example, it was stated that quinine lowered the temperature in typhoid fever, but had no such effect in erysipelas. The lesson to be drawn from such facts is that it is not safe to make sweeping therapeutic deductions from observations of the physiological action of drugs; to use the author's words, "physiology should not enslave medicine."—*N. Y. Med. Journal*.

CHOLERA INTELLIGENCE.—Cholera is still prevalent in Spain. The infected provinces are Valencia, Alicante, Castillon, Tarazona, Badajoz, Carthagena and Toledo. The total number of recorded cases up to the date of August 23 was 2,314, of which 1,167 had proved fatal. Over 20,000 persons have emigrated from Spain to France, but thus far no cases of cholera have been reported from any part of the French domain. Reports to August 25 state that up to that date 2,727 deaths from cholera had occurred at Mecca, and 1,083 at Jeddah. The disease is prevalent also in Japan, and the report of its appearance in Tokio is confirmed. The near approach of cold weather leads us to hope that its present severity will be mitigated, and that its progress will be stayed.

THE BRITISH warship *Buzzard*, which recently arrived at Halifax from Jamaica, is reported to have had nineteen cases of yellow fever on board. The report adds that one man died on the voyage, and was buried at Port Royal. Five of the men, it is expected, will recover.

SEVERAL cases of leprosy have, it is reported, been discovered in Englishtown, Cape Breton Island. The victims are said to have been in constant association with the other inhabitants.

THERE would appear to be a recurrence of influenza in Vienna. Several cases are stated to have occurred in the hospitals there. In Paris also the disease is said to be reappearing.

SMALL-POX EPIDEMIC.—A telegram received from Pernambuco states that 4,000 cases of small-pox had occurred there, with an average of fifteen to twenty deaths a day.

TOPICS OF THE WEEK.

THE POWER OF CREATION.

In whatever department of thought we find it occupied, the very nature of science is hostile to uncertainty. Facts, indeed, are not its constant possession, but its object, nevertheless, is always to know the truth as true beyond possibility of doubt. Nothing therefore can, in strict conformity with its character, be received on mere trust. All that is accepted must be capable of proof, and anything that cannot be thus verified, though true it may be, is to science a thing not known. In reference to all such matters, its position is that of the agnostic, properly so-called; not, that is to say, of a mere creedless bigot, but of an expectant and cautious investigator, accepting in belief only that which he has proved. In virtue of this very position, however, the description here given is but a partial one. It applies rather to a purpose than an actual condition. It is a true portrait of exact science only, and it leaves untouched the illustration of that far-reaching principle by which every branch of knowledge is made subject to the law of development, and passes through doubts, conjectures, and shrouded truths to the brightness of clear understanding. Science is no exception to this rule. It has its tentative theories, its mutable facts, and provisional acceptances, and its position would be logically untenable if it were to deny to other modes of thought a share in that charitable consideration which allows time for its own conclusions, however crude, to be planned, marred, recast, and slowly matured. The assumption of such a position would indeed be suicidal, for it implies a fatal schism among the forces concerned in philosophic inquiry. Science and philosophy, it must be remembered, are not contraries. They are merely the obverse and the converse of the same intellectual process, the former objective, the latter subjective as to its rational method. Either may, in the wider acceptance of its meaning, be taken to include the other, and it is only the prominence of one, the physical application of scientific study, which has associated the former with what we call matter, as distinct from spirit or mind, the natural sphere of the latter. However diverse they may seem to be, distinction between mind and matter is, in the present state of our knowledge, impossible. We are as yet without experience or information respecting the separate condition of one or another. At all points matter is instinct with incorporated properties which constitute the law of its being, though whence derived its atoms cannot tell us; and mind, on the other hand, can only confess itself through its physical manifestations. Though we should penetrate, if it were possible, beyond the earliest known traces of our world, we might still be as far as ever from a solution of the mystery, but at no stage could we expect to pass beyond the age at which these two became united. Everywhere we still find, whether in vital activity or in the buried vestiges of old-world existence, the sure signs of cause and effect. The design may vary, but its evidences are never wanting. Some, perhaps, may prefer to regard it as the essential possession of matter, and to dignify this with the

attributes of a creator. We cannot but think, however, that the very diversity of material forms, and their infinite variation in conformity with some discoverable purpose in each case, mark them out rather as the vehicles of some compelling force implanted in them. That this force is not purposive, but fortuitous in its action, is incredible. Given a certain stage in the progress of development, circumstances may, indeed, accomplish many modifications, as the laborious genius of Darwin has abundantly proved; but even these are governed by strict limitations, are apt to be transient in character, and are rather differences of degree than alterations in type. The argument for intelligent design is not seriously impaired, in our opinion, by such evidence of a merely material agency, and there is every reason to believe that this view is yearly gaining ground among the more scrupulous thinkers in physical science. It is significant to find an authority like Professor Tyndall, despite his belief in matter and force as primary factors in the production of life, admitting the probable existence of a "power of creation," which he associates with evolution, and proposes to invest with some feeling akin to worship. Professor Huxley's condemnation of materialism as "the most baseless of dogmas" is also—at least constructively—suggestive of a disposition to include within the beliefs of natural science the existence of a supreme directing intelligence.—Editorial, *London Lancet*.

MEDICAL SCIENCE IN THE LAY PRESS.

"Save us from our friends!" would probably be the exclamation of Dr. Vaughn of Ann Arbor, Michigan, when he took up his daily paper about the middle of last month. Dr. Vaughn's work in connection with ice-cream poisoning and tyrotoxicon, and his *brochure* on animal poisons, are both so well known that an inflated newspaper paragraph can scarcely do him much harm; but the system of lay press eulogy and advertisement that has grown up under the fostering care of those whose knowledge is somewhat limited, but whose desire for public recognition is an inverse ratio, would not protect from the derision of right-thinking men many so-called scientists. Dr. Vaughn has probably published, or there will be published through some other channel than the lay press, the results of his work on cholera infantum and typhoid fever. He has followed up the work of Hankin, Brieger, and Fraenkel, Roux and Yersin, and others, and he has added another to the list of tox-albumoses. The work that he has done is probably both thorough and sound, and we shall anxiously await the arrival of the record of such work in this country. It seems rather hard in his case that his fellow countrymen should in their hysterical excitement so magnify the work that they speak of Dr. Vaughn as a rival to Jenner. That the work is "a triumph to the States" will be fully admitted, more, however, from the fact that it adds another to the many proofs of the existence of a number—a number that is rapidly increasing—of highly educated, thoughtful, and skilful scientific medical men in a country where, not many years ago, the standard of medical education could not be said to be very high, and

where, even at the present, it is lower among the general practitioners than in any civilized country. America is the home of short curricula, and the happy hunting ground of the various "pathists" and quacks, but that there is an ardent desire for better things the very fact that such an article (ludicrous though it is in many respects) as that before us could be written, and could be acceptable to the readers of the *Ann Arbor Argus* of July 15, 1890, and the *Philadelphia Record* of an earlier date, is evidence. We have got beyond the extravagant stage in this country, but it would be well if many of the so-called medical articles that appear in our lay papers were suppressed.—*Lancet*.

COURT RECEPTION AT BERLIN.

By command of the Emperor, a Reception and Garden Concert was given at Potsdam, at which Prince Leopold, of Prussia, the Emperor's cousin, received the guests, attended by Count Caprivi, Court Marshal Count Eulenberg, Herr von Gossler (Minister of Education), and other high officials. Invitations were issued to 500 guests, selected from many of the leading British delegates and members. At the reception, which took place in the Shell Room, the guests were arranged according to their nationalities, and Prince Leopold, in walking round the circle, caused a number of the representative visitors to be specially presented to him, addressing to each of them a few words of courteous welcome. Subsequently a concert was held in the garden, in the course of which Prince Leopold mixed with the visitors, and conversed with them on subjects likely to interest each. Refreshments were served, and the party returned, being taken back to Berlin by the special train which had brought them. Everything was done to make the medical guests of Germany feel that the German Emperor fully participated in the cordial and generous welcome which had been given to them by the municipality, citizens, and the profession of Berlin, and desired to mark his gracious goodwill to the Congress and its members. Happily the weather on this as on all the other days of the Congress was peculiarly favorable, and the Court function was in every way an interesting and successful one.

FRENCH DEFENCE OF ILLIBERAL MEDICAL LEGISLATION.

Galignani's Messenger, of July 21, replying to the arguments of *The Lancet* attempts to defend the projected illiberal law of the Republic requiring foreign medical practitioners, including English, holding diplomas of good repute, to pass a French examination before being allowed to practice in France, even among their own countrymen. The attempt is lame and inadequate as regards our diplomas. It is chiefly based on three points: first, some of our English examinations are so bad as not to compare with the French. As an illustration of the accuracy of our contemporary's information we will give one specimen. He speaks of the licence of the Apothecaries' Society being gained by 97 per cent. of those who seek it. We know no ground for this asser-

tion. The facts of the examination of the Society for the last year are before us and are as follows: At the first examination 12 were rejected and 17 passed; at the second, 14 were rejected and 25 passed; at the final, 53 were rejected and 125 passed. The examinations have been inspected by the General Medical Council and declared to be sufficient. Our contemporary admits that we practically allow Frenchmen to practice in England without let or hindrance, but says that we do so because the privilege is of no such value as the corresponding privilege to Englishmen in France. This is ungracious and weak. Let the liberal Republic at least be as liberal as we are and enjoy the praise of being more disinterested. Meantime can anything be more ungenerous than to refuse English people, resident in France, medical advisers of their own country, certified by its medical authorities. We shall not answer the less polite insinuations and even assertions of our contemporary that, with some few exceptions, English representatives of the profession in France are eminently unsatisfactory. His elaborate argument against their admission is a fair presumption that they are no mean competitors for practice even among Frenchmen.—*Lancet*.

ANTISEPTICS AMONG THE ANCIENT GREEKS.

Prof. Andreas Anagnostakis, of Athens, gives in the *Deutsche Medicinische Wochenschrift* some interesting facts in reference to the employment of antiseptic measures among the ancient Greeks. Hippocrates and Galen were aware that an unclean condition of wounds retarded healing. They were also well acquainted with the fact that by thorough hæmostasis, suture and the employment of antiseptic measures, infection of wounds might be prevented. Hippocrates warned his disciples against the use of moist dressings, on account of the danger of suppuration, and forbade the employment of drugs before the wound was dry. Above all, says Galen, avoid dirt, as it prevents healing. The ancient Greeks boiled their water before applying it to wounds. Sponges were avoided, and charpie recommended in their stead, which was to be destroyed after use. One of the principal antiseptic substances then in use was wine, which was usually heated before using, and with which, according to Hippocrates, all wounds were to be washed. Dressings dipped in wine were also applied to the wound. Salt was in very general use, either in solution or in the form of sea-water. The solutions were rendered aseptic by boiling. Sulphate of copper was relied upon as an antiseptic for foul wounds, and was also put into use as a hæmostatic. Tar was highly praised for its antiseptic virtues, and was either applied in the form of a dressing or directly poured upon the wound. Besides these, many aromatics and bitters were in daily usage, among which were thyme, rosin, asphaltum, etc., used as dressings, or in the form of plasters. Galen was acquainted with catgut, and advised the use of non-putrefying substances for sutures. Prof. Anagnostakis declares that all this was not empiricism, but an antiseptic method founded upon some knowledge of the principles governing the healing of wounds.—*Druggists' Circular*.

PRACTICAL NOTES.

HYPOGASTRIC PUNCTURE OF THE BLADDER.

Dr. Deneffe (*Journal de Médecine de Paris*) says that too serious a view is taken of hypogastric puncture of the bladder in cases of retention. It ought not to be considered as dangerous, and as a last resource. He quotes a case of hypertrophied prostate which prevented micturition and catheterism, in which the patient was punctured seventeen times without suffering any inconvenience. The seventeenth time, the trocar was allowed to remain, and ten days afterward micturition took place spontaneously through the urethra. Nevertheless, the trocar was allowed to remain twenty-nine days, when it was removed. The fistula was closed in four days, and the patient recovered permanently.

Hypogastric puncture is considered a mild operation by Dr. Deneffe, and he states that he has performed the operation on three hundred and one patients, with a mortality of only two and a half per cent. A patient suffering from enlarged prostate or stricture suddenly cannot micturate, and this is usually due to a sudden spasm of the posterior portion of the urethra being superadded to the original lesion. Catheterism is not adapted to reduce a spasmodic contraction, and the urethra affected by spasm can only be benefited by the contact of irritating urine being removed.—*Medical Record*.

THE EFFECT OF ICED TEA.

Dr. G. W. Bar writes, in the *Therapeutic Gazette*, that iced tea has none of the physiological action of theine if it is kept ice-cold for a short time. He says that he has known a man of nervous temperament, who is kept awake all night by a single cup of tea, to drink a half-gallon of iced tea during the evening and sleep soundly at his usual time of retiring. Others, made very "nervous" by hot tea, have been able to drink large quantities of iced tea with no appreciable effect. If the tea-grounds are allowed to remain in the liquid, the iced tea is usually kept long enough before drinking to dissolve more tannin than is usual in hot tea; hence the tea should be strained as soon as removed from the fire.

COCAINE IN THE PTYALISM OF PREGNANCY.

Carlson, in *The Clinique* says: A young and very fleshy woman who was pregnant for the first time suffered extremely and became rapidly emaciated. She had the worst form of ptyalism with incessant running from the mouth, obliging her to have a spittoon by her bed or couch all the time. She also had a very distressing nausea, but with little vomiting. She was highly scrofulous, and had formerly had some eruption about the anus, under the arms, on the eyelids,

and on the neck, for which she had received treatment from a physician previous to her marriage. Beside the usual treatment I tried the effect of local cauterization of the uterine cervix with carbolic acid, which old expedient has benefited some of my cases very decidedly, but it did nothing for her. I then gave three hypodermics of five drops each of the five per cent. solution of cocaine at intervals of three days, keeping her quietly in bed meanwhile. The relief was direct and complete, and, although still very weak, she got up and went about without any further trouble. She was safely delivered of a nice boy on the 16th day of July.—*Times and Register*.

A REMEDY FOR TENDER FEET.

A remedy for tender feet is cold water—about two quarts, two tablespoonfuls of ammonia, one tablespoonful of bay rum. Sit with the feet emersed for ten minutes, gently throwing the water over the limbs upward to the knee. Then rub dry with a crash towel, and all the tired feeling is gone. This is good for a sponge bath also.

PHENACETINE IN TYPHOID FEVER.

I have just discharged my third case of typhoid fever with phenacetine treatment. Duration of each case, twenty-one days. All the drugs used was an opening dose of calomel, and then gave phenacetine, 3 grains, and sulphate of quinine, $\frac{1}{2}$ grain, every four hours, to a boy eleven years old. The skin was moist throughout. To adults I give 8 grains of phenacetine, with 1 grain of quinine. It kept the temperature below 101° eight hours.—W. S. Cline, *Medical World*.

FOR IRRITABLE BLADDER.

Dr. W. P. Chunn writes to the *Maryland Medical Journal* that the following prescription has been found to allay incessant desire to urinate, and irritable bladder when due to phosphatic deposits in the urine:

R. Acidi benzoici, 3 ij.
Sodii boratis, 3 iij.
Aquæ, f 3 xij.

℞. Sig. Tablespoonful three times a day.

This mixture has upon two occasions acted so efficiently in what was thought to be cystitis that cystotomy was dispensed with.—*N. E. Medical Monthly*.

NITRATE OF COCAINE IN THE TREATMENT OF URETHRAL DISEASES.

Lavaux thinks that the nitrate of cocaine should replace the hydrochlorate as a urethral anæsthetic, previous to the application of nitrate of silver. The nitrate may be prepared by pouring a solution of the hydrochlorate into a solution of nitrate of silver. An absolute precipitate of chloride of silver falls, and nitrate of cocaine remains in solution.

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Special Meeting, August 19, 1890.

W. S. FOSTER, M.D., PRESIDENT IN THE CHAIR.

EXHIBITION OF SOME URETHRAL INSTRUMENTS.

DR. STEWART: The first instrument is the urethragraph. A year ago last July I exhibited my first urethragraph. I have made a number of changes. This instrument is for the purpose of recording a diagram of the urethra, giving the exact circumference at every point. The next instrument I will show you resembles the first one. It is almost the same in principle. It is for a different purpose; it is a combined urethrameter and urethratome, so made that it will either measure the urethra or cut a stricture. This instrument is inserted into the urethra as far as you may desire, usually to the bulbous portion. If you desire to cut a stricture, you first ascertain the size of the healthy portion of the urethra, the part you do not wish to cut, then permit the blades to open to the size you desire to cut. Having done this, fasten the screw on the upper surface and withdraw the instrument. The third instrument is the urethroscope, the fourth an urethral syringe.

DR. THOMAS: I have had no experience with the doctor's instruments. I did have a little experience in the doctor's presence with his first urethragraph. At the time it was not perfected, so that my experience will not serve in my remarks at present. The principle of the instrument is doubtless correct. I have been using the urethrameter of Professor Otis, which I have considered the best in the market. The difficulty I found was this: that you had to cover the instrument with a gum tube, the gum tube always giving more or less resistance. After passing the urethrameter down as far as it would go to the bulbous portion, and then opening its arms to the full calibre of the urethra, then in withdrawing it when you would come to a stricture, of course the instrument would cease. Then in order to pass through the stricture, you had to reduce the calibre until it would cut through the stricture, but in bringing it through the stricture you could not tell where the stricture ended. You might pull your instrument anterior to the stricture. Now, that is the trouble with the Otis urethrameter. In the doctor's urethrameter, if the spring has the proper sensibility to come and go with the inequalities of the urethra, then it is a typical instrument. But the question is to me whether you can get a spring sufficiently graduated to come and go as you withdraw the instrument.

DR. STEWART: As Dr. Thomas has suggested,

the spring in the instrument we used together was weak; this has been remedied.

DR. WERDER reported:

FIVE LAPAROTOMIES.

Case 1. Intra-ligamentous Cyst.—Aged 22 years; epileptic; typhoid fever in October last, followed by bad health. Noticed a tumor growing since, reaching from one to one and one-half inches above the umbilicus down into the vagina, bulging out Douglas' cul-de-sac and pushing down the anterior wall of the rectum, in fact almost completely filling out the pelvic cavity. The tumor was immovable, fluctuating and distinctly pulsating both over the abdomen and in the vagina, suggesting the possibility of an aneurism. Exploratory laparotomy, March 29, exposed an intra-ligamentous cyst, which had to be peeled out of its capsule. It was a tedious and difficult task. Drainage. Patient made an excellent recovery, without rise of temperature and notable increase of pulse-rate. Had an epileptic attack immediately after operation, then none for a week, though previous to operation she had a number of them every day. After first week they returned at intervals of several days.

Case 2. Pyosalpinx.—Miss M. D., 26 years of age, had poor health for several years; about a year ago she was obliged to go to bed, when an abscess ruptured into her rectum, which continued to discharge for several months. After the discharge had ceased, her health improved and she gained flesh, but six weeks later she experienced great pain in her right side, and when she entered the Mercy Hospital another abscess had ruptured into the vagina. She was extremely emaciated and anæmic. Laparotomy performed April 6. The anæsthetic used was the "mixture." Immediately after opening the peritoneal cavity she became asphyxiated. Respiration and pulse were arrested for fully five minutes; artificial respiration was performed, head and chest lowered, and hypodermics of whisky administered. Probably ten to fifteen minutes passed until the respiration and pulse became normal and the operation could be continued. On introducing my hand into the pelvis, I found one large mass from which neither uterus, ovaries or tubes could be distinguished. After a great deal of trouble I succeeded in freeing the right tube and ovary from their adhesions; both contained pus-cavities. The left tube was also removed with the greatest difficulty; its ovary, however, could not be found. A drainage tube was inserted. Twenty-six hours after the operation a fecal odor was detected in the discharge from the drainage tube. The following day she commenced to discharge fecal matter in large quantities, and from now on most of her feces passed through the tube and on the sides of it, continuing to do so for a week. The wound was kept clean by enemata, which were

immediately returned through the fistulous opening. During this time her appetite was poor, and vomiting very frequent, so that she became exceedingly weak. The fistula gradually closed up, so that at the time of her discharge from the hospital, there was only (sometimes at intervals of several days) a slight discharge of flatus. The occurrence of this faecal fistula can easily be explained by the fact that the left tube distended with pus had become adherent to the rectum and discharged its contents through the latter. In separating this tube from its old adhesions to the rectum, the old rectal fistula of necessity was re-opened, and as a consequence, by virtue of the life-saving drainage tube, the faecal matter found its way through the external wound.

Case 3. Pyosalpinx.—Mrs. A., three years married, aged 30 years, had one child at eight months, and was never in good health since. Had three attacks of pelvic peritonitis since; with the last one she was brought into the Mercy Hospital. A very tender mass could be felt on both sides of her uterus, which was diagnosed as a double pyosalpinx. Laparotomy, April 29. Tubes and ovaries on both sides very firmly bound down to the pelvic floor and adherent to loops of intestines. They were brought up with considerable difficulty and tied off. Ovaries on both sides were firmly attached to their corresponding tubes, each ovary and tube forming one abscess-sac. Drainage. Patient rallied badly from the operation, and vomited incessantly. She had taken ether very badly, a very large quantity being needed to keep her relaxed. The incessant vomiting was therefore attributed to the ether. It kept up for forty-eight hours; for thirty hours her pulse was about 160 and very feeble; had Cheyne-Stokes respiration and an ashy color about her face. She was fed and stimulated freely by rectum, and forty-eight hours after operation she was much improved, her convalescence being then uninterrupted by elevation of temperature and with a good pulse; appetite was good, and she was sitting up in bed, when on the evening of the twelfth day a sudden change came over her; she complained of pain about the chest and of loss of appetite. Had shown symptoms of hysteria a day or two previous to this. I examined her carefully; her pulse was 100; temperature perfectly normal; abdomen flat without the slightest tenderness. She rested well during the early part of the night, but towards morning she became very restless, and died suddenly at 6 A.M. on the thirteenth day after the operation. A *post-mortem* examination could not be obtained. Her death was entirely unexpected and its cause very obscure, though I have reasons to suspect pulmonary embolism.

Case 4. Solid Tumor of Right Ovary and Ascites.—Mrs. S., æt. 45, no children, consulted me

about an abdominal tumor, situated on right side of uterus, hard, irregular, freely movable, and reaching midway between the anterior superior spinous process of the ilium and the umbilicus. Lately she had suffered so much pain, that she had to be kept under the influence of opiates constantly. The diagnosis was either solid tumor of right ovary or subperitoneal fibroid of uterus with long pedicle. Laparotomy, May 6. On opening abdomen a considerable quantity of ascitic fluid escaped. The operation was extremely simple, as there were no adhesions whatsoever. Patient made an uninterrupted recovery, the temperature never being above normal. The tumor, of the size of a large cocoa-nut, had become partly cystic and appears to be a fibroid of the right ovary.

Case 5. Abscess of Left Ovary.—Miss Annie C., æt. 24, has been in bad health for over a year. I was called to see her about a year ago, and found a large mass to the left of her uterus, not very tender to the touch, and fluctuating. She was greatly reduced in flesh and very weak. Under treatment her general condition improved, but her local trouble remained the same, though local treatment was conscientiously employed for four months. I then advised laparotomy following my diagnosis of left pyosalpinx, but the operation was refused. She then placed herself under the care of another physician. Two or three months later, while going to her physician's office, on getting off the street car, an abscess ruptured through her vagina, and this was followed by a severe attack of pelvic peritonitis. At this time I was again called in, and found the mass on her left side considerably larger and exceedingly tender. She was now very anxious to have the operation performed. Laparotomy, June 16. Removed a large ovarian abscess containing about a pint of pus. The sac was adherent to the omentum, intestines, anterior surface of bladder, and had to be peeled out; on doing this, the tube, firmly attached to it and to the pelvic floor, was broken off; the remaining portion was then brought up with great difficulty. The ovary was one large abscess cavity, and the tube also contained pus. The right tube and ovary were, contrary to the usual rule, not removed, as the patient's condition was such as to make it dangerous to perform a second operation on her, especially as they seemed perfectly healthy. In breaking up the adhesions around the abscess-sac I accidentally ruptured it, and the pus poured freely into the abdominal cavity. This was thoroughly and repeatedly washed out with hot water and a drainage tube introduced. Her recovery was uninterrupted, the temperature and pulse remaining perfectly normal, except on the day after the operation, when the temperature rose to 100°. She is now in perfect health and has gained much in flesh.

DR. MACFARLANE: It is gratifying to see so many patients relieved of tumors who do well. I

do not say that it occurs in the hands of all operators, but very frequently the patient is left in a condition nearly as bad as that in which she was prior to the operation, the only effect being to prolong life for a time.

DR. WERDER: I will simply state that it is very unfortunate when the patient is left in the condition spoken of by Dr. MacFarlane. It is very important, in performing a laparotomy, not to make your abdominal incision larger than is necessary. A small incision only is needed, not more than 3 inches. Now, if this is united very carefully, and the stitches put in at proper intervals, I think herniæ will not occur very often, though they cannot always be prevented. In regard to fistulæ, those are things that will often occur from septic ligatures. If you have not your ligatures absolutely aseptic, it is very likely that a fistula will follow, but with perfectly aseptic material, it should be a very rare occurrence to have a fistula.

CASE OF TYPHOID FEVER.

DR. KEARNS: A boy twelve years old, in the third week, ceased to speak even in monosyllables, and this condition continued for about ten days. During this time there was no apparent impairment of intellect. Sitting at the bedside of the patient and telling him to put out his tongue, he did it instantly. Telling him to look toward me that I might examine his eyes, he did it instantly. The pupils of his eyes were markedly dilated. Then, at the expiration of these ten days, the case assumed the very opposite condition and became loquacious; he would take up any conversation which occurred in the room and follow it up repeatedly. This condition continued day and night with some short intervals of rest for ten days, when it gradually stopped. The pulse was accelerated during this period of excitation. It was at a normal stage during the period of quietude. All this time the stomach had been in good condition. Now here are two extremes. What condition of the brain and nervous system is involved in these conditions of two extremes in the same patient and the same disease? This cerebral excitation was very difficult to control. The simple remedy which appeared to have the desired effect was calomel. I administered a grain $\frac{1}{4}$ of calomel every two hours, then when the bowels began to run off, in smaller doses. To me this was a very interesting case, and I ascribe the nervous symptoms to a complicating meningitis.

DR. THOMAS: During the month of April, I saw a patient with typhoid fever. The boy was thirteen years old. He had been sick about a week. The fever ran an ordinary course. About the twenty-first day there was defervescence, and I presumed the case was going on the convalescence. I visited the boy as long as I remained in the city, and in the meantime he would not

speak a word until the day before I went away, I got him to say one word. I did not feel uneasy about him, his temperature not being above normal. He went into the hands of Dr. McNeil. On my return I found the boy all right, and was told that in speaking to his grandmother, in whose care he was, upon his beginning to talk again, the first word he said was "cracker." He said: "Cracker, cracker, cracker," for three or four minutes; then he ceased calling for crackers. I looked upon it as caused by anæmia of the brain.

DR. STEWART: I remember a case where a man lost the power of the right arm. The loss was progressive, and then he had convulsions. The convulsions were in the arm affected. Subsequently they became general and he would become unconscious. The convulsions became very frequent, several times a day. An operation was performed under the supposition of lesion in that area. The man had had syphilis. Iodide of potassium had no effect on the case. The brain was uncovered and only a localized meningitis was found. Incisions were made into the brain and nothing was found. The man ultimately recovered the use of his arm and had no more convulsions.

DR. McKENNAN: I find that it is not at all uncommon to have peculiar mental states following typhoid fever; mental weakness and also very frequently mental exhilaration. I have seen many cases of insanity which have been traced to typhoid fever. I have never seen a case of meningitis in a child with typhoid fever. The whole weight of authority goes toward the supposition that the lesion is purely of a functional character and that there is rarely any structural lesion, although some authorities state the possibility that there may be embolism which could only involve one artery.

DR. LANGE: No matter what cerebral symptoms we may have in typhoid fever, there is no justification for the assumption of meningitis. No matter how violent or how peculiar are the cerebral symptoms, the assumption of meningitis is not correct, is not justified. I do not know that typhoid fever and meningitis are incompatible, but I mean to say that *post-mortem* examinations in cases of typhoid fever which presented most violent and most strange ataxic symptoms have so invariably proven the absence of meningitis and of all inflammation, that such symptoms cannot be correctly assigned to meningitis or to any structural lesion, but are to be considered only as the toxic effects of the typhoid fever poison. Neither can I understand how the speech center can be affected by a meningitis without previous and greater injury to the motor areas, which being in closer opposition to the meninges than the centre of speech, would primarily, and to a greater extent, be subjected to meningeal pressure.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Summer Homes and Hospitals for the Poor—What the St. John's Guild is Doing to Help the Movement—The Children's Aid Society—Health Resorts in New York State—Miscellaneous Gleanings.

The movement for enabling the poor of the city to enjoy the benefits of fresh air in the summer, which was inaugurated less than twenty years ago, has now extended to enormous proportions and ramified in many directions. Originally started to relieve the children in the crowded tenement districts during the heated term—by day excursions—it has been extended by the establishment of a large number of summer homes and hospitals, at the seaside and in the country, which are fitted up with the best sanitary appointments, and where the children, both sick and well, are often kept for weeks at a time. Besides this, many children are annually cared for in the country, free of expense, by farmers and others who take them into their homes, and the fresh air fund work has further been extended by various churches and societies; so that, while a vast number are thus reached through charity, summer resorts have also been provided where those of moderate means, especially young working girls and women of refined tastes, may secure a summer outing at a very low cost.

For many years one of the most prominent organizations in this fresh air work has been the St. John's Guild, to which Dr. Charles A. Leale, Dr. William Thurman and others have unselfishly devoted much time and thoughtful attention. The Guild owns a large seaside hospital at New Dorp, Staten Island, and a floating hospital which makes salt water excursions, loaded with women and children four times a week during the summer season. Free admittance to these excursions is given to poor sick children and their mothers, the tickets for which can be had at all the dispensaries and from the physicians of the summer corps of the Board of Health. A warm dinner is served on board, and there is an abundant supply of fresh milk for the children. Besides, free baths are furnished to as many children as can be accommodated in the bathing department. Of course, no cases of contagious disease are admitted, and a physician is always at the dock to examine each child that is brought to the boat. The less serious cases stay on the upper deck. The more serious ones are kept on the lower deck, and they have the privilege of going to the seaside hospital for such a length of time as the circumstances of each require.

When the floating hospital reaches the lower bay, it is moored amidstream opposite the seaside

hospital, and the number of flags displayed on the flagstaff of the latter indicates to those on board how many vacant beds there are and how many women and children can be accommodated. The seaside hospital has two pavilions, with a central executive building, and the wards extend the entire length of the pavilions. A staff of two physicians and three trained nurses are in constant attendance. A pleasant beach is near the hospital, and the patients have the benefit of sea bathing, as well as sea air.

Last year 30,057 sick children and mothers were carried on the floating hospital on free fresh air excursions. Thirty-three trips were made from July 9 to September 6, 2,056 salt water baths were given on board under medical supervision, and the cost *per diem* for maintenance of the hospital was 21¼ cents *per capita*. Each trip of the barge involves an aggregate cost of about \$250, and the trips are made alternately from the east and the west sides of the city. At the seaside hospital 1,013 sick children and 500 weary or invalid mothers were admitted to the wards, and after being well fed and cared for for a suitable period, were generally returned to their homes with restored health and vigor. In twenty-three years St. John's Guild has sent out 398,915 children and mothers on its excursions.

A very large work in this guild is done by the Children's Aid Society, which conducts a Health Home at West Coney Island, and a Summer Home at Bath, Long Island. The Health Home has pleasant cottages and dormitories for the reception of mothers with children under five years of age, where a week's stay is allowed. Each week a party of from 60 to 100 mothers and sick infants are taken to the Home, and last week there were cared for at it 1,838 children and 1,048 mothers for a week, and 2,955 women and children who remained for from one to three days. The Summer Home at Bath was bought several years ago by Mr. A. B. Stone, for \$20,000. Each week during the summer parties of from 250 to 300 little children from the tenement districts are taken down there to enjoy its rest, comforts and pleasures. There are also day picnics from time to time at this Home.

The subject of fresh air is suggestive of health resorts in general, and New York State is especially fortunate in having within its borders, and readily accessible from the large cities, so admirable a mountain sanitarium as the Adirondack Forest region. No one has done so much to call public attention to the peculiar virtues of the Adirondacks from this point of view as Dr. Alfred L. Loomis, who a number of years ago was himself cured of serious pulmonary disease by a residence of some months among them. Within the last few years it has been conclusively demonstrated that many persons in the incipient stage of phthisis, for whom medical science could

do very little elsewhere, might, by a longer or shorter sojourn in that region, pretty certainly have the progress of the disease checked, and in a considerable percentage of cases be entirely restored to health. The Adirondacks are accordingly now recognized by the profession and the public in general as possessing curative properties for consumptives to be found in but few other places in the world. In the United States a portion of Colorado and the mountain region of Asheville, North Carolina, are apparently the only ones having such properties in anything like so high a degree.

The chief of these is fresh air, and the character of the Adirondack region seems admirably adapted to secure this. It contains a vast elevated plateau with rolling surface, which secures perfect drainage and freedom from miasmatic poison. The soil over a large portion of the country is light and sandy, and, by quickly absorbing excessive moisture, helps to secure a dry atmosphere. There are many miles of unbroken forest, largely of pine, balsam and other evergreen trees, from which the air comes not only purified, but laden with resinous aromas which are themselves powerfully disinfectant and antiseptic. The results of these and other favorable conditions have been found by actual test to be so satisfactory that a constantly increasing multitude of invalids now resort thither, while a considerable number of individuals, finding that they cannot enjoy health elsewhere, have made this region their permanent home. Rigorous as is the climate in winter, it has been found that with the clear, dry, bracing air of the cold months, the advantage to consumptives of residence there are even greater at that season than in the summer.

Many of the general considerations that influence the minds of those seeking a health resort appear to favor the Adirondacks. A change in air and surroundings is often deemed necessary, and almost any change that is not decidedly for the worse is apt to prove advantageous to the debilitated. A change merely for the sake of change is thoroughly defensible; but the Adirondacks fortunately afford not only a change from the ordinary life in the city and country, but a decided change for the better. There are new scenes, new surroundings, and new, pure air, with a perfectly healthful general environment. As compared with a city life, there is quiet instead of noise, and leisure instead of hurry and bustle. All cause for the high nervous tension maintained in the teeming centres of business disappear; so that the visitor drops out of one kind of world and finds himself in another of an entirely different sort. There is complete change and a chance for complete rest. But rest is not always found in idleness, and the surroundings met with do much to furnish means of occupation and recreation. There is the most picturesque scenery

with exquisite walks and exhilarating mountain climbing. Beautiful lakes and streams abound for boating, and in the winter one has plenty of sleighing and skating. For those inclined to sports there are hunting and fishing, with abundance of game and fish in their season. Finally, there is camping, which is such a prominent feature of Adirondack life, and is universally recognized as most efficacious in the renovation of worn-out humanity. Consumption, being peculiarly a disease of civilization, is nourished by bad air and over-work amid insalubrious conditions, and a recurrence under favoring conditions to some of the features of aboriginal life, therefore, appears to be often the best possible treatment for it. But if the Adirondacks are unequalled as a health resort for actual invalids, they are also equally valuable to those who need not to be cured, but only invigorated or carried over a hot month.

The most noted health resort in the Adirondacks is the village of Saranac Lake, which is rapidly growing in importance and in popular favor, and for the past two years has been the terminus of the Chateaugay Railway, which affords as yet the only means of reaching the heart of the Adirondack region by rail. It is beautifully located amidst the most charming scenery, and its situation and the hygienic conditions existing there are believed to be especially favorable. It has a large population in the winter as well as the summer, and, in addition to numerous boarding-houses and private cottages, a large, first-class hotel, fitted up with all the modern luxuries, is now kept open all the year round. The fact that so many persons with pulmonary trouble are here seeking relief has caused them to be recognized as a distinct class. In the slang of the town they are known as "lungers," but as it is upon the money which they spend that the prosperity of the place in a great measure depends, they are naturally treated with the utmost respect.

An institution at Saranac which is accomplishing much good and is meeting with constantly increasing appreciation and encouragement, is the sanitarium for consumptives founded a few years ago by Dr. Edward L. Trudeau, formerly of New York, who, in consequence of suffering from phthisis himself, removed to the Adirondacks. Having become permanently cured, he has since continued to reside there, and, being an ardent student of the pathology and treatment of the disease, he has devoted himself largely to original research, and from time to time has added contributions of substantial value to our knowledge of this subject. With very limited financial means at his command, he commenced the work of the sanitarium in a very small way, and for a time it had a hard struggle for existence. He lost no opportunity, however, in interesting people with whom he came in contact in the institution, and

gifts began to come in. The contributions from well-to-do visitors to the Adirondacks now amount to a good many thousand dollars, and several separate cottages have been built, each by the gift of a single individual. Two such cottages are now in course of erection; one of them being given by the wife of Dr. Loomis. Mrs. A. P. Stokes, of New York, has also proved a generous friend to the sanitarium, and a pavilion is now in process of erection at her expense which is to be especially devoted to the recreation of the inmates, being fitted up with billiard tables, and other appliances for amusement, and provided with ample piazzas, which can be inclosed with glass in cold or stormy weather. The various contributions have not only increased the capacity of the sanitarium, but have also provided free beds for those unable to pay the regular charge of \$5 a week. The generous spirit shown of late has made it pretty certain that the sanitarium will be permanent, and in fact, the hope is now entertained that an endowment fund large enough to pay the necessary expenses will soon be secured.

The institution has never paid but one salary, and that is to the matron, who acts as general superintendent. Until the past year it has not had a resident physician. For a considerable time Dr. Trudeau was the only attending physician, but more recently he has been efficiently aided in this work by Dr. C. F. Wicker. The sanitarium now has about fifty inmates, and it is not only full, but has a list of names on hand of applicants who desire to enter as soon as there is room for them. As it was established "for the cure of pulmonary diseases," and to aid those of insufficient means, admissions are naturally restricted as far as possible to hopeful cases and to persons unable to pay all their own expenses. The history of most cases of consumption, it is believed, shows that there is a time when restoration to health might take place if the patient could for a while give up his occupation and care, and obtain a change of climate and surroundings. It is, accordingly, the intention to restrict admissions to persons in the incipient stage of phthisis; but such intention is not easily carried out, and certain cases of a different character are sometimes admitted. Some of the results met with in the institution may be judged from the following extract of the last annual report:

"From February 1 to November 1, 96 patients have been treated. Of these, 1 died in the institution, 11 continued to lose ground and returned to their homes, 17 have temporarily improved, while in 17 the disease was arrested, and they were sufficiently restored to resume their occupations, and 8 have been cured. The remaining 42 are still under treatment."

One of the chief features of the treatment is, of course, the keeping of the patients in the open air, and making sure that they shall have per-

fectly pure air when indoors. To this end the ventilation of the cottages is carried to the utmost degree of completeness. Patients are required to be outdoors several hours every day, winter and summer, and opportunities are afforded for riding, as well as for walking and other exercise. The sanitarium is picturesquely situated on a hillside overlooking the Saranac River, and having an elevation of 2,000 feet above sea level, the air is dry nearly all the time. It is said that not more than four or five times a year is any deposit of moisture found on the cottage piazzas in the morning. The cottages, which are tastefully constructed, are all small; accommodating only from two to five persons each.

The great natural advantages which the Adirondacks afford as a health resort and breathing-place for the people, which are now becoming so generally appreciated, render it imperative that they should be supplemented by all that art can do to make them permanent and accessible. Already the vandalism of lumbermen, charcoal burners, and railroad projectors has laid waste vast districts of noble forest; and not only should these forests be preserved, but every step taken toward opening roads and settlements should be under capable supervision. The best intelligence and skill that the State can command should certainly be employed to make this great natural State park a park indeed, the attractiveness and usefulness of which should be increased, rather than diminished, as time goes on.

The last monthly bulletin of the State Board of Health announces that 11,083 deaths were reported in the State during the month of July. According to the bulletin, July has uniformly the largest death-rate of any month in the year. The average number of reported deaths per month for the past five years has been 7,866, while that of July has been 10,252. The infant mortality is also highest in July, more than half of the deaths being of children under 5 years of age, the average of the rest of the year being about one-third. For July of this year the infant mortality is a little below the average, but is much higher than in June. Of the total number of deaths, 4,254 occurred in New York City, and 2,219 in Brooklyn. The deaths under 5 years were 2,609 in the former, and 1,384 in the latter.

A Chinese laundryman, of Hoboken, having consulted a physician of his own nationality for some abdominal trouble, the exact nature of which is not now of importance, was informed that it would be necessary for him to undergo an operation by a "Melican doctor." Under these circumstances the patient considered life no longer worth living, and, rather than submit to the surgical procedure, he made his will, set his house in order, and quietly threw himself into the Hudson River, whence his body was fished out a few days afterward.

P. B. P.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of August, 1890, compared with the preceding month, the reports indicate that dysentery, typho-malarial fever, typhoid fever, cholera infantum, and cholera morbus, increased, and measles, puerperal fever, whooping-cough, and cerebro-spinal meningitis decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity was less, the relative humidity was slightly more, the day ozone and the night ozone were less.

Compared with the average for the month of August, in the four years 1886-1889, scarlet fever and influenza were more prevalent, and puerperal fever, whooping-cough, typho-malarial fever, erysipelas and cerebro-spinal meningitis were less prevalent in August, 1890.

For the month of August, 1890, compared with the average of corresponding months in the four years 1886-1889, the temperature was lower, the absolute humidity was less, the relative humidity was about the same, the day ozone was slightly less and the night ozone was slightly more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of August, 1890, at 49 places, scarlet fever at 48 places, typhoid fever at 61 places, and measles at 24 places.

Reports from all sources show diphtheria reported at 1 place less, scarlet fever at 7 places less, typhoid fever at 32 places more, and measles at 48 places less in the month of August, 1890, than in the preceding month.

LETTERS RECEIVED.

Dr. J. Adelphi Gottlieb, Dr. John A. Cutter, W. H. Schieffelin & Co., Dr. E. Eliot, New York City; Dr. J. M. Wilson, "Spring Valley Farm," Ky.; Dr. A. O. Gilman, St. Cloud, Minn.; Dr. A. W. Sydney, Fitchburgh, Mass.; Dr. J. H. Van Eman, Kansas City, Mo.; Dr. J. B. Mattison, Brooklyn, N. Y.; Dr. W. F. Rochelle, Jackson, Tenn.; Sultan Drug Co., St. Louis, Mo.; Dr. W. L. Worcester, Little Rock, Ark.; C. L. Topliff, New York City; Dr. E. W. Davis, Saginaw, Mich.; James O'Gorman, Baltimore, Md.; Mt. Carmel Hospital, Columbus, O.; Dr. P. H. Reilly, Mineral Point, Wis.; Katharmon Chemical Co., St. Louis, Mo.; Dr. T. D. Crothers, Hartford, Conn.; Dr. Marie B. Werner, Philadelphia; Dr. A. W. Brayton, Indianapolis; Canton Surgical and Dental Chair Co., Canton, O.; Dr. J. L. Hillmantel, Missoula, Montana; Dr. T. G. Horn, Colorado Springs, Col.; M. A. Spencer & Co., Cincinnati, O.; Dr. C. F. Ullrich, Wheeling, W. Va.; Dr. R. L. Thompson, Spokane Falls, Wash.; Jno. R. Barrett & Co., Subscription News Co., Chicago; Tanner's National Bank, Catskill, N. Y.; Bowden Lithia Spring Co., Lithia Springs, Ga.; Dr. R. R. Walker, Austin, Texas; Dr. L. R. Culbertson, Zanesville, O.; Dr. L. W. Weedon, Tampa, Fla.; Dr. D. F. Randolph, Waldron, Ind.; Dr. T. D. Spencer, Rochester, N. Y.; Dr. J. W. Terry, Englewood, N. J.; Mt. Vernon Sanitarium, Mount Vernon, O.; Dr. Jennie S. Godfrey, Dr. Wm. J. Ennis, Washington, D. C.; W. P. Cleary, M. H. Peet, N. Y. City; L. Dell, Dr. A. R. Small, Chicago; Dr. J. F. Jenkins, Tecumseh, Mich.; A. A. Marks, J. H. Bates, N. Y. City; Plimpton Mfg. Co., Hartford, Conn.; Dr. Guido Bell, Indianapolis, Ind.; Dr. E. R. Fletcher, St. Paul, Neb.; Dr. I. S. Stone, Lincoln, Va.; Dr. E. R. Thompson, Mabel, Minn.; Dr. R. M. Wigginton, Waukesha, Wis.; Dr. R. A. Gunn, N. Y. City; Dr. Albert B. Prescott, Ann Arbor, Mich.; W. Pa. Medical College, Pittsburgh, Pa.; Dr. W. S. Caldwell, Berlin; P. Blakiston & Co., Philadelphia; Dr. C. Plá, Cuba; Dr. H. S. Johnson, Lawrenceville, N. J.; Dr. W. K. Sutherland, Mansfield, La.; Dr. R. W. Miller, Los Angeles, Cal.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 4, 1890, to September 12, 1890.

By direction of the Acting Secretary of War, First Lieut. Nathan S. Jarvis, Asst. Surgeon, is relieved from duty at Ft. Verde, Ariz. Ter., and will report in person to the commanding officer, San Carlos, Ariz., for duty at that station. Par. 4, S. O. 208, A. G. O., Washington, September 5, 1890.

Major A. A. Woodhull, Surgeon, is granted leave of absence for one month, on surgeon's certificate of disability, with permission to go beyond the limits of the department. Par. 1, S. O. 122, Hdqrs. Dept. of the Missouri, St. Louis, Mo., September 5, 1890.

First Lieut. Leonard Wood, Asst. Surgeon, is hereby granted leave of absence for one month, to take effect on or about October 20, 1890, with permission to apply for an extension of one month. Par. 1, S. O. 74, Dept. of California, San Francisco, Cal., August 30, 1890.

Capt. Edward C. Cutter, Asst. Surgeon U. S. A., is granted leave of absence for one month. Par. 2, S. O. 108, Hdqrs. Dept. of the Columbia, September 6, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 13, 1890.

Medical Director Theoron Woolverton, ordered to U. S. S. "Philadelphia" September 15.

Medical Inspector Thomas N. Penrose, detached from the U. S. S. "Richmond."

P. A. Surgeon J. E. Gardner, detached from the U. S. F. C. Str. "Albatross."

P. A. Surgeon N. H. Drake, detached from the U. S. C. S. Str. "McArthur," and to the U. S. F. C. Str. "Albatross."

P. A. Surgeon T. A. Berryhill, detached from the hospital, Mare Island, Cal., and to the U. S. C. S. Str. "McArthur."

P. A. Surgeon A. C. Heffinger, ordered before Retiring Board October 1, 1890.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending September 6, 1890.

Surgeon John Vansant, granted leave of absence for thirty days, to take effect upon return of Asst. Surgeon J. C. Perry to duty. September 5, 1890.

Surgeon Walter Wyman, to proceed to Cape Charles Quarantine Station, on special duty. August 25, 1890.

Surgeon Geo. W. Stoner, granted leave of absence for four days. August 19, 1890.

P. A. Surgeon D. A. Carmichael, leave of absence extended fifteen days. August 26, 1890.

P. A. Surgeon R. P. M. Ames, to proceed to Memphis, Tenn., on temporary duty.

P. A. Surgeon S. C. Devan, leave extended five days on account of sickness. August 12, 1890.

P. A. Surgeon L. L. Williams, granted leave of absence for thirty days. September 5, 1890.

Asst. Surgeon H. F. Goodwin, granted leave of absence for thirty days. August 21, 1890.

Asst. Surgeon J. O. Cobb, to proceed to Marine-Hospital, Detroit, Mich., for duty. August 16, 1890.

Asst. Surgeon S. H. Hussey, granted leave of absence for thirty days. August 19, 1890.

Asst. Surgeon J. C. Perry, granted leave of absence for twenty days, to take effect when relieved. September 3, 1890.

Asst. Surgeon G. B. Young, to rejoin his station at St. Louis, Mo., when relieved. September 3, 1890.

APPOINTMENT.

Asst. Surgeon Milton J. Rosenau, commissioned as an Asst. Surgeon by the President, August 25, 1890. Ordered to Chicago, Ill., for temporary duty. August 27, 1890.

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ADDRESSES.

THE CARE AND TREATMENT OF THE INSANE IN THIS AND OTHER COUNTRIES.

Being the President's Address, delivered before the Ohio State Medical Society, June, 1890.

BY JOHN CURDY, M.D.,
OF YOUNGSTOWN, O.

The manifestations of a diseased brain have always made a deep impression upon the sane, and those impressions have called forth the most contradictory impulses.

We find that mental culture or scholastic attainments alone have never done anything for the protection, comfort and cure of this class. The treatment received at their hand has been so unjust, oppressive, tyrannical and so often brutal as to shock the coarsest natures of to-day. We find no record where the man whose head only has been educated ever lifted a sorrow or a burden from their breaking backs, or extended the hand of protection, encouragement or consolation to this helpless class.

Looking far back to the point where history and legend inseparably blend we find mental culture and ripe scholarship for the times, but no help for the insane save where it was blended with the devotional, the spiritual and the worship of the Divine or the Divinities.

Only when the religious and reverent instinct, the cultivation of the heart, the affections and the sympathies were developed do we find the insane cared for and comforted. While Egypt, from one hoary century to another, was the seat of so-called culture her insane were unpitied outcasts, the persecuted and the reviled, as possessed of devils or any demoniacal spirits the jeering and brutal populace saw fit to inhabit them with. Only when the devout worshipers of the Gods met in the temples did the insane find rest, or find those who had a rational conception of their actual condition. The same is true of Greece, with all her pure, classical tastes. Only in the temples of Asclepia, a priestly craft educated as physicians and taken an oath to keep sacredly the mysteries of medicine, and who claimed to be descendents of the god Æsculapius, were they ad-

mitted and treated swiftly and agreeably as was the order of their great founder.

The first asylum built for the insane was by monks of Jerusalem, in the fifth century, and also in Spain the first efforts to establish their treatment on the basis of disease was by the monks of Saragossa. The first hospital ever established in England was by private subscription of philanthropic individuals, in 1751.

During the fierce conflict of brute force and ignorance, known as the "dark ages," the only place the demented got a shelter from the scourings and imprisonments was in the monasteries and the homes of the worshipers.

Truly the coarseness and asceticism of the times entered into these havens, but forbidding as they were they held about all the comfort, sympathy and love to be found. It cannot be pleaded that places for the relief and care of the sick and wounded were not known in the early ages, for we cannot go back to the time when hospitals for lepers did not exist, and when brotherhoods and sisterhoods who vowed to devote their lives to works of charity and mercy, for wounded and sick did not exist. Even the mighty hospital "Hotel Dieu," of Paris, was established in the seventh century. Coming now down to the times when our present forms of government were put in practice we see the politician cared no more for his insane brother than the barbarian of former ages.

In Ireland, that land so full of helplessness and infirmities, the record is that it was modern society that compelled their statesmen to provide hospitals for the insane. The Irish practice had been to tie ropes around their arms and fasten them to carts and compel them to walk the whole distance to the asylums; and so great was the resistance and savagely secure the tying that one arm in five had to be amputated from the mutilation that resulted, and when they reached these places all who could pay were compelled to do so. The testimony before a commission of inquiry was as follows: "One house contained twenty-three—fourteen men and nine women—chained to wooden boxes six by two and one-half feet. Once a week they were taken into the open air and the straw changed; and they were so dirty that a careful inspection was impossible. The

physician in charge said he treated them by bleeding them twice a year, gave a vomit once a week, and then purged them, and that had been the treatment for years before his time." It is with pride we refer to our young nation as giving birth to the practice of treating these afflicted ones as diseased—and put it into practice in Philadelphia in 1750. The first asylum that could be called curative was that established by the Friends, of England, for the insane of their own denomination—the famous York Retreat—the principal treatment being *moral over mechanical* methods. Again we find that comparatively small body of Friends, whose hearts are ever attuned to the spiritual and not literal lessons of the Revealed Will, were the first to buy fifty acres of land as early as 1817, near Philadelphia, and there established a retreat for this class, where they could feel they were not outcasts and abandoned, but yet friends and brothers.

The humane and cultivated people of old England waged a determined warfare for the rights of the insane, getting their first hospital built in 1547. In 1742 the legislature took some steps in their interest, but their struggles were against a forlorn hope and they generally suffered defeat, as the mad-houses provided were of the most revolting kind. Even down to within a few years—1842—an old jail was considered good enough for an insane asylum, and at the old Bedlam considerable money was made by the keepers exhibiting the unfortunate inmates as wild beasts chained and caged, and tormented by instruments thrust against and into their bodies by their keepers. Only fifty-two years ago, when Dr. Hill wished to treat the insane by kindness and the taking off of their shackles, the authority and opposition were so fierce he was compelled to resign. But to-day, behold the changes that have flashed like sheets of electricity over this same land. The wildest flights of Jules Verne scarcely equal the actual progress made. Now the entire bosom of this old mother of Christian civilization is beautified with the grandest homes for these unfortunates where love, kindness and affection is ever present. Every thought, impulse and plan that promises good are tried with eager earnestness, and Colony Hatch, Caterham, Hayward's Heath, Brookwood, Wakefield, Wadley, Hanwell Asylum, Baunstead, Leavesden, Prestwick, Wittingham and Birmingham are grand monuments to the sanctified hearts and cultivated brains of the English people.

Whether the classes are rich, poor or medium, all are treated by the most thoroughly educated and progressive alienists. The rooms, halls, apartments of every kind are made home-like and even elegant by the hangings, pictures, curtains, books, furniture; everything betokens quiet repose, refined comfort. An alienist of our own State and member of this society, of whom we

are proud, Dr. Orpheus Evarts, says: "*Comfort means cure.*"

Truly to-day we can answer yes, when the question is asked, "Canst thou not minister to a mind diseased, pluck from the memory a rooted sorrow, raze out the written troubles of the brain, and by some sweet oblivious antidote cleanse the stuffed bosom of that perilous stuff that weighs upon the heart?"

In this favored land the patients are classified; the chronic, the harmless and the quiet are not disturbed by the frenzies of the maniacal or the threatened dangers of the violent. Everything in the shape of dungeons, bars, high walls and appliances for bodily restraint or either wholly removed or reduced to a minimum. The tastes of the occupants are carefully considered and fostered. Many are employed in farming, gardening, stock-raising, dairying and horticulture; while others do sewing, cooking, laundrying, housework, etc., etc. Although land is held at exorbitant prices in England, yet so great is the zeal for the care and cure of this class that large tracts are purchased and in use by most of the asylums.

The early treatment of the insane in Scotland is but a repetition of England's, with, perhaps, a little deeper shading, their infirmities being considered evidence of possession by devils or witches, and some were publicly burned as witches as late as 1722. Centuries after this heroic little nation prided itself not only on its military prowess but its advanced so-called civilization, at Inverness the space between the arches of an old bridge was converted into a repulsive vault, used at first for a jail, then a mad-house. Into this place the insane were thrust one generation following another, as late as 1815, and was not abandoned until the last victim was devoured by rats.

In an uncertain and halting way some improvements were made for this class, but the shocking truth remains that until yesterday—1855—and not until America produced Miss Dix, that woman so full of Christian zeal and philanthropic impulses, who visited that land and pleaded with that people did they sweep forever from all their valleys and heather-covered mountains these haunts of cruelty. And this land is, in my opinion, to be carefully studied and imitated in its way of providing quiet, liberty and pleasant abodes for its old, feeble and harmless insane, as well as its boarding-out and probationary discharge system.

Scotland may well point to her asylums at Woodilee, Midlothian and Morningside with honest pride.

In Ireland's case the same holds good that the student of the spiritual and unseen first opened his heart to the mentally dethroned, and their first ray of comfort reached them in the little St.

Patrick Hospital of Dublin, established by Dean Swift in 1745, which to-day is still a shelter and port of peace for this class.

The same neglect, cruelty and inhuman punishments inflicted in the countries named, as they were in Germany, France and Russia, were practiced in poor, badly-governed and restless Ireland. Therefore, nothing more will be said on this part of the subject.

The number of mentally diseased in Ireland is about one to three hundred and thirty-three, while in our country it is about one in six hundred and eighteen. The Irish heart is very impressible, and considering the misfortunes of this beautiful island, its poverty, famines and discontent, the migratory character of its people and never ending rebellion against its government, this class is well provided for. Its aims and plans are comprehensive and thoughtful, and its strivings are ever after the most humane and advanced methods known. Its medical officers and attendants take a prominent place for scientific and effective management. It has sixteen government hospitals and many private asylums, and it can well point with pride to its asylums at Cork, Belfast, Donegal and Dublin. All are full, and for many of its unfortunates the poorhouses are their only homes.

Great prominence and much praise have been given the plan pursued in Belgium as carried out in the Colony of Gheel. Here again we find the religious instinct is the foundation of this famous retreat. Its history is wrapped in legend. It covers a territory of about forty square miles. The legend is that the lovely daughter of one of Erin's kings in the seventh century became converted to Christianity, and being persecuted by her unnatural father, fled with her spiritual adviser, and they found a refuge where Gheel now stands. Her father pursued, found and murdered her and her adviser. It is believed this lovely maiden, now St. Dymphna, not only forgave her father, but believed him insane and greatly desired to alleviate madness in others. Pilgrims came and implored her intercession. Her tomb is sacredly guarded, elevated upon short pillars, that persons can pass under it upon their knees. Through these long centuries the weary feet and knees of pilgrims who have sought relief from their afflictions have worn the stone pavement very smooth. The long custom was when arrivals came for a priest to say mass and read prayers to them for nine days, and then in company with some children, to pass around and inside the church three times, and each time the tomb was reached they prostrated themselves and passed under it upon their knees. Should the new comers be too violent to do this some children were hired to do it for them.

There are about three thousand houses in this colony and about one-third of them are boarding

houses for the insane. All live in poor, or but middling cottages, and while moderate thrift is seen, an air of poverty is everywhere marked. About twelve thousand form this colony and about seventeen hundred are insane. A board of commissioners has control of all matters pertaining to the insane, and in addition to this there is a permanent committee which enforces all regulations. Universal unrestraint does not exist. All applicants for admission pass through a hospital and those unfitted for family life are refused admission. Although mechanical restraint is used, consisting of padded welts, waist-bands, padded rooms, etc., they are used as seldom as possible. Even in this vaunted home, through the long centuries of its existence up to 1803, its inmates suffered grievous wrongs from coarse and brutal officials, and so oppressive were they that Dr. Parigot, sent as inspector, reported that their treatment was even more cruel than that of negroes he had seen in South America. Even up to a few years ago—in 1851—Dr. Pliney Earle says he saw in the streets of Gheel a man with his waist encircled with an iron belt, to which his hands were secured by wristlets, and in the suburbs and among the farms several were fettered with iron, the chains between the ankles being eight inches long, and in some cases the rings around the ankles had abraded the skin and occasioned bad ulcers. It was not until 1856 these abuses were removed by the appointment of Dr. Bulckens. Fourteen hundred of these people are paupers and divided into three classes, according as they can care for themselves, partly care for themselves, or cannot care for themselves, and the prices charged the communes that send them is, for the first \$1.09, for the second \$1.22, and for the third \$1.43 respectively per week. There about two hundred and thirty-eight private patients who pay from \$11.00 down to \$1.60 per week. The pauper class is compelled to work to partly pay for their keeping, and as the whole colony is low, flat and wet, with roads in bad weather almost impassable, and with stables, manure heaps, privies and cesspools in close connection to the abodes, with their floors of earth, the majority of these poor people is yet wretched. This colony does not receive all cases as do the asylums of this and other countries. With the many proofs of paucity to me the greatest is that of the medical staff. One physician with one assistant looks after each section, but does not give all his time as he has private practice. The rule is they visit each patient once a month, and troublesome cases whenever necessary; acute cases at least once a week; the register showed that ten weeks intervened between visits, and until within a few years ago—1879—the medical officer was only required to visit the patients three or four times yearly. There is also a medical director who makes a general visitation.

Beer is freely sold to all, and the only injunction is that they must not drink "too much," and the beer seller, who tries to make the most out of his business, is the one who determines the limit.

The American who visited this place was struck with the lack of bathing facilities, ventilation, pure water, and numerous other comforts, and the number of idiots among this population seemed large and out of proportion, and the liberty given certain classes of the insane, as the young women whose maladies assumed the erotic form, was far from being humane or safe, and the shocking exhibition of person seen daily upon the streets must have a demoralizing effect on the vast number of children who witness them, and, as might be expected, illegitimate births occur.

It is with eagerness and a sense of comfort we turn from this colony of so much squalor and poverty to that most delightful and cheerful home in Saxony, Alt Scherbitz. How changed everything. Scrupulous cleanliness, ample room, perfect sanitation, quiet, good food, flowers, lawns, with broad and fertile fields, with a large and admirable medical staff assisted by numerous and well-trained nurses, and an intelligent zeal to give each patient all the personal freedom his condition will allow. This grand hospital has nearly eight hundred acres of land attached. The inmates are classified and separated. Part, all, or none of the expenses are borne by the patients, as their condition permits. Upon each admission, after proper rest, the whole medical staff is summoned and each independently makes a diagnosis, and all are placed upon record. The dignity and worth of the medical officer is recognized by placing all things under his control, who administers the oaths to his subordinates, grants furloughs, etc., and in his own case after serving a certain time is retired and pensioned. Villas are located here and there over the whole estate for proper classes, and made home-like, and the occupants given possession in a way to secure their interest and care. Their laundry, scullery, dairying, stock raising and extensive farming are all aimed to be performed within themselves as a means of treatment of great value. Mental recreation united with bodily labor is the constant aim, and the records show that about 90 per cent. are on the employment roll. Excursions by the inmates are regularly made, and the expenses of those too poor to pay are borne by the asylum. In the Elster, which flows through the farm, extensive swimming baths are provided, while all that indicate restraint and confinement are removed.

The principal places for treating insane in France are La Salpêtrière, Paris, an immense almshouse which contains about sixty-five hundred people, of whom about six hundred are of unsound mind. It has seventy-four acres of land attached to it. The asylum of St. Anne is mod-

ern and contains nine hundred patients, and those only dependent and suffering from acute attacks are here treated. Clinical teaching is extensively conducted by the Paris faculty of medicine. Charenton is old, was founded in 1642, and was a monastery of the monks of St. Jean de Dieu, who first treated the insane. It holds six hundred and is self-supporting. Here, as at St. Anne, bathing, Turkish baths, douches and packs are largely used as a means of treatment. Clermont Endise is principally noted for carrying out successfully the colonization of the insane. It contains sixteen hundred who are separated into classes, and all are employed who can be induced to work. It has one thousand acres of land, thoroughly cultivated by the inmates, who raise not only all vegetables necessary, but are so successful in horse and cattle raising that many prizes are taken at exhibitions and fairs, which interests and stimulates the patients who rear and exhibit them. Coercion is forbidden, but rewards in money and dainty foods, etc., are given as inducements to labor, and six hours is a day's work. All are controlled by the distinguished alienist Dr. Gustave Labitte. Here, as in many other asylums in Europe, all sewage and offal are utilized.

From the preceding it will be seen the present treatment of the insane in England, Ireland and the Continent is kindness, comfort, physical and mental employment of the pleasantest varieties and adjusted to the tastes, with the greatest liberty and least restraint possible. How does the treatment in America compare with this? Let us see. The revolting history of Europe struggling up through all the grades of semi-savage and barbarous life we have none. Our pioneers came with the most advanced forms of Christian civilization then known and practiced; therefore, our insane were never subjected to dungeon and prison life. Yet they were far from being treated and cared for as to-day. Still we see the seeds of love and humanity germinated in their favor earlier than in any other spot on earth, for forty-two years before the sympathetic and learned Pinel begged and was allowed to unchain the fifty-three from the old Bicêtre Hospital in France, the Friends in Philadelphia gave him the precedent and taught him the lesson, and as Pinel was one of the best educated alienists of his day there is scarcely a shadow of a doubt he was familiar with this great fact. This was, in my opinion, the most remarkable stride from custom, experience and so-called science ever made in the interest of mercy, kindness and sympathy, and is confirmation of the thought before expressed that those only with cultivated spiritual perceptions, or strong natural veneration for the supernatural have ever made the most intelligent, strenuous and successful efforts, and showed the broadest and best judgment in the treatment of the mentally diseased.

From the origin of that sect founded by Geo. Fox to this hour, where is there a body of people so spiritual, so pure, so charitable in practice and so gentle and peace-loving as the Friends? All that is coarse and brutal have no place in their lives. War, slavery and oppression they fight to the death, while they as ardently cultivate peace and gentleness. Spiritual perceptions with them are the realities, and the grossness of literalism finds no place in their chart of life. How natural then that they should first put forth the hand that unlocked the doors and removed the shackles of their weak and benighted brothers, and lead them forth into the freedom and inspiration of God's blessed sunlight. Yes, while the youngest of the mighty nations, we are the oldest by nearly half a century in setting these captives free. In old England the first well authenticated account we have of a home for the insane on a basis of moral and gentle restraint over physical confinement is that of the York Retreat, founded by the Friends in 1792, which is still open both as a retreat and "mercy seat."

When we remember that we are in fact thirty-eight separate nations, each assuming absolute control and treating their mentally infirm as their intelligence and conscience guide them, it is with the keenest patriotic pride we witness such advanced philanthropy. The single aim of all these great commonwealths is to lift speedily the dark cloud of mental depression with strong but gentle hands. Therefore, everything that money and willing hands can secure is theirs: broad acres with lawns, flowers, walks, parks, farming, stock raising, dairying and every form of indoor work, to which are added libraries, music, pictures, beautiful hangings, attractive mottoes and soothing colors, and upon them are erected homes of every size and condition, from the massive and grand looking linear, compact structures designed by the late Dr. Kirkbride, to the two-story wood cottage. The bars are kept from the windows, doors unlocked, mechanical restraint, save in the rarest instances, forever hidden from sight. All the daily and best news and books with cheerfully lighted and seated reading and study rooms are theirs. Amusements, intellectual entertainments of a high order are lavishly provided, and all are treated with that gentle respect so vital as a remedial agent in mental derangements. Some of the States, as New York and Michigan, are dividing them into classes and acute cases kept by themselves, and no case is too chronic or desperate to be called incurable, or placed beyond the best medical skill. The strongest and most gratifying evidence we have of the cultivated tone of our country is seen in the hospital provided by the general government for the insane of our Army and Navy. Its buildings are upon four hundred acres and much more will be asked for and doubtless received and added to it. Lands

for farming, grazing, horticulture, floriculture, lawns, walks, and strolls are attached.

This valuable investment is under the superintendence of Dr. Goddard, an alienist whose written articles and opinions are known and valued by all intelligently informed on insanity. His earnest efforts have pushed this asylum to the forefront of modern treatment. Pleasant apartments for all and work on the farm for those who enjoy it, and also for those who can be induced to engage in dairying, stock raising and floriculture. Their literary tastes are gratified also by ample libraries, reading-rooms, resting places, etc. The most gentle and just treatment is secured to all with liberties and freedom of action that would have stamped its superintendent as wildly insane if permitted a few years ago; and the freedom here enjoyed is still considered by some a reckless flying in the face of hoary-headed but decrepit experience. The various types of brain disease are here treated in a thoroughly scientific manner. The able medical staff in a methodical and painstaking manner watch each type, noting all its objective and subjective symptoms and its termination. If death results the able pathologist commences his researches, and carefully preserves all changes and discoveries. Thus, at this institution, a literature and authority are made that are standard throughout not only America, but the world. Here again the thought pushes to the front, already expressed, that those of the strongest and most vivid spiritual discernment and culture have done by far the greatest work for the betterment of the insane. Grand and ample as is this hospital, with the thousands who have crossed its threshold but to be blessed and improved, its existence was conceived in the heart and head of that unostentatious, simple, zealous Christian woman, Dorothea L. Dix. The life of this woman is a monument of what may be done single handed when one's soul is on fire and burns itself out in earnest love for the helpless. She not only went from one end of our land to the other, visiting all places of all kinds where human beings, from whatever cause, were confined, exhorting and instructing their officials, while she gathered facts on all subjects and of all descriptions; and with these she addressed, pleaded with and besieged city officials, State legislatures and United States Congresses, in session and out of session, until she beheld the entire American system changed for the better, while her eyes and great heart were filled with the tears of joy and thanks as she saw reared according to her dearest wishes thirty asylums. Her labors did not stop here, but crossing the Atlantic the hospitals and prisons of Europe heard her loud knocking at their doors, which persisted until admitted, and they were thoroughly inspected and reported. From her Scotland received the inspiration and

instruction that lifted her insane out of pestilential, dark dungeons and placed them in the homes of light, cleanliness and comfort, and to-day no country excels her in the humane and successful treatment of the sick in mind.

While I cannot stop to speak of the scores of asylums in the various States, all excellent in their way, I am reluctant to pass the Willard of New York. This was constructed for the chronic insane, the sympathies of Dr. Willard having been called into action by the wretched condition of the so-called incurable insane confined in the poorhouses of the various counties. Here the classes are separated, able bodied workers by themselves, feeble-minded and harmless by themselves, etc., and each in comfortable structures upon various parts of a large farm, employment or amusement being provided for each, all under the care of the same administration. Its buildings are not expensive, the plan works admirably, and it should commend itself to every State, as the immense sums of money required to build the Kirkbride style are not necessary. In the treatment no case is considered absolutely hopeless, and a delightful home is here provided for more than two thousand. At Utica, in the same State, the asylum is one of the most admirably conducted in the world. Its superintendents have been a long line of officers who have stood from the first on the outposts of advanced alienists, and for forty-four years they have edited the *Journal of Insanity*, which, for scientific worth in its line, has no peer in America, and is an authority in all nations. Here, as in the government hospitals, all that experience and love of the work suggests is tried, and all pathological changes of the brain and nerves are critically examined and reported by the accomplished pathologist of the staff.

In many respects New York is far in advance of all other States, and one of the most radical is the examination of all persons connected with her asylums, and if successful, placed upon the civil list, where they live and act above all political scheming and huckstering. Nearly each State and Territory has its peculiarity in the care of its insane, yet I must say here that the old foster-mother of social, scientific and educational advancement, Massachusetts, has a grand asylum system, with her separation into classes, and her training school for nurses, all of which mark her advanced position.

Coming now to our own and what is the "great State of Ohio," what do we find? With pride and truth we can say we have six State institutions, a credit alike to us and the nation. Situated in Cleveland, Columbus, Dayton, Athens, Toledo and Carthage. Also several private homes, as the Cincinnati Sanitarium and Oxford Retreat; the former presided over by the scholarly gentleman and distinguished alienist, Dr. Orpheus Evarts. Our Cleveland asylum has

been partially destroyed by fire, but was originally on the Kirkbride or compact linear design, and is now a congregation of grand buildings three and four stories high, and for the past fifteen years in charge of Dr. Jamin Strong, whose kindness, suavity, executive ability and skill mark his continued success, and whose opinions in his specialty upon the witness stand or to the court are law. The record of recoveries is flattering and the low mortality remarkable. A farm of one hundred and sixteen acres is attached. It has sixty attendants, one to each twelve, and its capacity is seven hundred, and always crowded. Seventy additional are employed on the farm, laundry, kitchen, etc. Of my personal knowledge I can say that so home-like and tranquil has this great State retreat proven that many, who have been discharged, when they feel their old affliction coming again upon them urge their friends to return them to it, or voluntarily go alone. Our asylum in Columbus is under the skilful care of Dr. J. W. McMillan. The buildings are four stories, massive and striking in appearance, with a capacity of nine hundred, and to which is attached three hundred and twenty acres, and is both an ornament and credit to our Capital city. Its superintendent considers congregate dining halls and the moving of the infirm to the first story in place of the fourth, where they now are, very necessary. The Athens asylum is very expensively constructed, the buildings being three and four stories in height, and with a capacity of eight hundred, and generously supplied with attendants for all departments, and presided over by Dr. Richardson, whose zeal, experience, foreign travel and study have made him a most successful and efficient officer. To it is attached a farm of one hundred and eighty acres. The Dayton asylum is on the Cleveland plan, all its appointments are substantial, very fine looking and costly. Its superintendent is Dr. Pollock, a thoughtful, careful and successful general practitioner before entering upon his duties, and under whose care order and excellent results are obtained. Its capacity is six hundred, and about two hundred acres are attached divided into lawns, walks, grazing and farming. The asylum at Longview has a capacity of six hundred and eighty-four, with ninety acres of land and the buildings are on the plan classed as old by some, but for durability, cheerfulness, good lighting and fine appearance is hard to excel. The last State asylum to be named is at Toledo. Under the progressive, and I may truly say adventurous Dr. Toby. It is by far the largest hospital in our State, its capacity being 1,170, and present number nearly up to that point. One hundred and seventy-five acres is attached, and more to be asked for. It is on the cottage plan, the buildings being but two stories in height, cheap but comfortable; the freedom

allowed is phenomenal and everything that militates with non-restraint is set far in the background. Excellent reports come from this most modern of all treatments of the insane. Our citizens have never said no when asked for money to build and sustain asylums. We have immense sums now in these institutions, and are almost constantly enlarging them for this ever increasing class.

Are there are yet things left undone in the best interests of the helpless insane? Yes. Let me tell some of them. The first and most important thing is to take from all county poorhouses these unfortunates and so-called incurables that are so generally persecuted by vicious and ignorant political thugs, who often get these positions as reward for party services, and have the State alone take entire charge of them. In my opinion there is not one county in the State that provides proper apartments and treatment for them. On the other hand the brutal crowding and endless confinement is shocking and destructive of all hope of recovery, for they have no occupation, improper treatment and no comforts. Mercy joins justice and conscience in saying, *remove them all*. Second, we must have and shall never cease until we do have all officers and attendants thoroughly examined, and only when a rigid test proves them peculiarly fitted for their positions can they occupy them. Then put them upon the civil list, as in New York and some other States, above political removal, intrigue and continued uncertainty. Third, we want a separation of the acute and chronic, far apart, that each may be treated, environed and employed in the way most conducive to recovery. Fourth, no more immense buildings to be erected where they shall be collected and kept, but colonies, especially for the chronic, be founded and made comfortable in small inexpensive structures. Fifth, in connection with each asylum at least one-half acre of land for each patient, that everything pertaining to rural life may be cultivated. Lastly, we want the medical schools to dignify much more than has ever been done the study of all mental and nervous affections, and so instruct their graduates that they will recognize and treat these diseases in their earliest and most curable stages by having them speedily placed in these special hospitals.

MEDICAL ACHIEVEMENT IN CHINA.—It is said of Dr. Kerr, a medical missionary at Canton, that he has, in the past thirty-six years, treated over 520,000 patients, and has prepared twenty-seven medical and surgical books. He has trained one hundred medical assistants, chiefly Chinese. China now possesses one hundred and four hospitals and dispensaries, at which, in 1889, more than 348,000 patients received treatment.

ORIGINAL ARTICLES.

MATERIALISM VERSUS SENTIMENT IN THE STUDY OF THE CAUSES AND CORRECTION OF CRIME.

Read in the Section of Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY G. FRANK LYDSTON, M.D.,
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When, in response to the courteous and complimentary invitation of the distinguished secretary, I promised to write a paper upon the relation of materialism to the vice problem for this Section, I did not realize the difficulty of presenting views of a comprehensive character within the compass of a single paper. Since beginning my task, however, I have found that it will be impossible for me to present anything more than an array of generalities. These generalities, gleaned from an extensive range of thought upon this subject, I trust may at least serve as food for reflection.

Some years ago I published in the *Chicago Medical Journal and Examiner* a contribution entitled, "The Pathological Causes of Vice." This was based upon observations of the criminal class during my service as surgeon at the Blackwell's Island Penitentiary, and in other metropolitan institutions. This article, while well received by the majority of my friends in and out of the profession, invoked the wrath of a few orthodox individuals to such an extent that I was stimulated to further discussion and study of the subject. Fanatical opposition is sometimes an excellent evidence that our work is based upon sound principles.

In announcing myself as a materialist as far as the study of vice is concerned, I trust that my position may not be misinterpreted, for it is certainly not my intention to detract from the importance of the moral law in its relation to the production and repression of vice, or to lessen the efforts of the moralist in his attempts to oppose goodness to badness. It is the function of the materialist to liberalize the existing theories regarding the causation and repression of vice and to reduce the subject to a scientific and, as far as possible, evolutionary basis.

The study of the causes and prevention of vice and crime in their various phases is one of the most important and practical questions of the age. The varying forms of violation of physical, social, statutory, and moral law, which are included under the heads of *vice* and *crime*, are the outcome of certain circumstances of environment and laws of progression, which are, and have ever been present and operable in society; in all social systems, whether of high or low degree of development, and in every grade of civilization. It is obvious therefore that a philosophical study of

vice is a social necessity, quite as much so as is the study of morbid conditions of our physical bodies resulting from aberrations of physiological laws. Indeed, the two studies are more or less interdependent, and therefore demand the interest of the physician as well as the philosopher. In my opinion it is to the physician, and not to the moralist or law-maker, that the society of the future is to look for measures of repression or the better correction and prevention of vice and crime. Our knowledge of the causes and methods of prevention of crime is at the present time decidedly unsatisfactory and crude from a philosophical standpoint, chiefly because the science of statistics is yet in its infancy, and to a great extent because the moralist has acted as an obstructionist and has impeded the progress of those who have undertaken to reduce the question to a purely physio-philosophical basis.

I will at this point advance the proposition that the actions of man are governed entirely by the state of society in which they occur. Crimes are the result of precedent circumstances; they are the pictured and tangible results of occult influences, past, present and to come, *i. e.*, they are the result of an all-pervading, invincible and everlasting law. Criminal acts are not isolated experiences with no necessary antecedents or future repetitions.

The doctrine of free will, (*i. e.* of individual responsibility), is so simple and appeals so strongly to the self-esteem and sentiment of the masses that it is accepted by the majority of individuals with a faith and simplicity that prevails on no other question of corresponding magnitude. How simple and satisfactory it is for us to say that our fellow-man has committed a crime, because forsooth he is less holy than we! This Pharisaical sophistry is but the outcome of human egotism, and as long as it prevails and controls our social, moral and legal efforts at repression, so long will our criminal classes flourish and multiply. Indeed, "he who does not advance goes backward," and our social system is apt to grow worse instead of better.

It is hardly necessary to go into details regarding the superficiality of the prevalent methods of study and repression of crime. It is so apparent that it must strike the most casual observer. Much has been done in the way of moral and physical persuasion, but very little indeed in the direction of philosophical methods of the study and correction of causes. As civilization has advanced and theology has become enlightened in its theory and methods, a corresponding improvement in the moral tone of the social body should be expected. Unfortunately, however, there has been no improvement—as far as statistics serve to testify—which is sufficient to encourage the efforts of the moralist to any great extent. The futility of moral measures, as demonstrated by

past experiences, is explicable only upon the ground that there is something more than free will to account for criminal acts. Free will is operable only in the case of individuals, and moral persuasion affects only the individual and incidentally the circumstances which sway the volition of the criminal. It accomplishes little or nothing in correcting or antagonizing the general law underlying the production of the criminal class. By analogical reasoning the futility of moral means of repression may be readily shown. We will suppose, for example, that a certain portion of the human body is affected by disease dependent to a greater or less extent upon a depraved constitutional condition. Obviously measures of local correction, *i. e.* correction of the local depravity of tissue, although useful to a certain extent, fail of their object unless the general and constitutional influences which tend to enhance the local trouble are recognized and corrected. The individual is but an atom of the social fabric. When he is depraved, logic requires a search for, and if found the correction of the morbid general or constitutional influences pervading social body which bring about perversion of thought and action in the individual. Moral persuasion is but a minor consideration; the law cannot cope with the question, and punishment is futile because these influences operate upon the isolated integer and not upon the law of causation. Admitting that certain criminals are so by reason of structural peculiarities, the inefficacy of preaching is at once explicable.

That criminality is the result of certain causal influences operating by a fixed law has been recognized by several eminent historical and statistical authorities. Buckle and Quetelet have advanced some striking arguments bearing upon the influences modifying the moral conduct of the human race. It would appear that many of the actions of mankind which we are prone to attribute to free will and independent action upon the part of the individual, are really the result of a fixed and immutable law controlling the moral world, almost as definite and arbitrary as the laws controlling the physical world. As compared with this law the independence, *i. e.*, free will of the individual and the local circumstances of environment in operation at the time of the apparently volitional action, are of but little moment, and are but accidents in the chain of events. It has been shown by the statistics of Great Britain and France that there is a constant proportion maintained in the ratio of criminal acts to the number of population in those countries.

Rawson says: "No greater proof can be given of the possibility of arriving at certain constants with regard to crime than the fact that the greatest variation in the proportion of any class of criminals at the same period of life during a pe-

¹ Inquiry into the Statistics of Crime in England and Wales.

riod of three years has not exceeded a half of one per cent."

Quetelet says: "In everything which concerns crime the same numbers recur with a constancy which cannot be mistaken. This is the case even with those crimes which seem quite independent of human foresight—such, for instance, as murders, which are generally committed after quarrels arising from circumstances apparently casual. Nevertheless we know from experience that every year there takes place not only the same proportionate number of murders, but that even the very instruments with which they are committed are employed in the same proportion."

Buckle says: "Suicide is merely the protection of the general condition of society; the individual's volition only carries into effect what is the necessary consequence of preceding circumstances. In a given state of society a certain number of persons must put an end to their own lives. This is the general law, and the special question as to who shall commit the crime depends of course upon special laws which however, in their total sections must obey the large social law of which they are all subordinates. The power of the larger law is so irresistible that neither the love of life nor the fear of another world can avail anything toward even checking its operations."

Buckle further shows by statistics that notwithstanding the varying causes of suicide which exist in society, such as political excitement, want, mercantile crises, disappointments in love, depression induced by disease, etc., there has been in London a very constant average of suicides, the average having been during five years 240 per year. The variation in the number was not very great in proportion to the number of population, running from 213 to 266, the latter number being attained in the year 1846, which was distinguished by the great railway panic. At this time the ratio of suicides might naturally be expected to be extremely high, but as a matter of fact, it was less than one-half per cent. higher than the preceding year. Mechanical laws may be disturbed by accidental disturbances, yet they prevail; so it is with the moral law.

As showing how the regularity in the course of events may manifest itself in the most trifling details of every day life one of Buckle's statements is very interesting. It is not infrequent for individuals through carelessness to drop undirected letters in the mail box. Such an oversight might naturally be attributed to individual carelessness, but it is shown by statistics that in London and Paris, due allowance being made for varying circumstances, increased population, etc., that there is practically the same number of undirected letters found in the mail every year.

It is generally supposed that in the matter of matrimony the individual is governed by free will. Statistics prove that there is a constant variation in the proportion of marriages corresponding to the rise or fall of the price of food products. So it may be seen from the foregoing that as far as statistical evidence goes we may well believe that "there is a Divinity that shapes our ends, rough hew them as we may."

Leaving the question of a general law influencing society and determining with unwavering fidelity the occurrence of certain acts which we term criminal or vicious, it is unquestionably true that there are certain special causes in operation. The influence of heredity is so well recognized that any remarks in that connection may be considered trite; it would however be impossible to do the subject justice without an allusion to it. It is not always an easy matter to isolate hereditary influences from others of a special character which operate in the development of vice and criminality, but there are certain typical cases upon record which conclusively prove that hereditary impulses to breaches of social ethics are a very important consideration in the study of the causes and prevention of vice. There is frequently an intimate association between hereditary defects of a physical character and those manifestations of heredity which result in crime. In many instances a special act of criminality can be directly traced to certain hereditary or perhaps congenital physical aberrations. The powerful influence of heredity in the production of vice and crime is not so manifest in this country as in some of the older countries of the world. Its influence is not so dominant among the higher classes, in countries in which a Republican form of government prevails as in those in which an effete monarchical and aristocratic system of control exists. The older and larger the city the more pronounced its viciousness. Thus it is to London we must look for the very refinements of vice and crime. The *expose* of the hideous orgies of Cavendish Square followed very closely upon those sensational murders of women which attracted the attention of the whole world to the great metropolis.

In Dr. Ireland's book, "A Blot on the Brain," we have evidence collated which is sufficient to convince any thinking man that the aristocracy of the Old World is hereditarily rotten to the core. My hearers may perhaps be familiar with his unmerciful handling of the House of the Romanoffs, in which his statements are so eminently true that the sale of the book has been prohibited throughout the Russian domain. Not that the aristocracy *per se* are more liable to viciousness than any other class of people similarly situated. Unbridled license, idleness and the possession of unlimited resources, when taken in connection with the circumstance of consanguinity or in-breed-

² Sur l'Homme, Paris, 1835.

³ History of Civilization in England.

ing, are enough to account for the corruption of the dominant element in European society.

That actual physical aberrations or atypical conformations of structure must bear a certain responsibility for the development of the criminal class is amply shown by the researches of Benedict and Osler. These experimenters have shown quite a constant relation between atypical cerebral development and criminality. The assertion that criminals and a certain class of insane exhibit a defective or aberrant brain development, has been the conclusion of such students of the subject as Corre, Lombroso, Mills, Rousel-Marro, Pavlosky, Varaglin, Tenchini, and Badik. To be sure we must take into consideration the naive declaration of Benedict that certain of these cases were collected as the result of a *a priori* conviction that the criminal is an individual having the same relation to crime, as his next blood kin, the epileptic, and his cousin, the idiot, have to their common encephalo-pathic condition. Hackneyed as the illustration may be there is as yet no better exemplification of the effects of heredity than that embraced in the wonderful tables and statistics of the immortal Richard Dugdale in his history of the Jukes.

Ribot, in his famous work on Heredity, has shown remarkable examples of an inherited predilection not only for crime in general, but of certain forms of crime and vicious impulses.

I perceive that my paper is spinning out to an unwarrantable length, and I will therefore present as briefly as possible those causes which students of this important social problem should always be ready to recognize.

1. The first cause is that occult all-pervading and remorseless law which pervades all social systems. To this law I would apply the old term *predestination*, were it not in my opinion too arbitrary an expression and likely to lay me liable to the impeachment of illiberality. This cause has already been sufficiently expatiated upon. There appears to be an occult influence of an epidemic character affecting chiefly the crimes of murder and suicide. This is so trite that I would scarcely mention it but for my desire for completeness of classification. There has recently occurred in rapid succession in numerous large cities in this country a considerable number of cases of wife murder followed by suicide. These are an illustration of a peculiar kind of homicidal mania of an apparently epidemic character which occurs now and then. It is my opinion, and in this I am not alone, that the public press fosters this epidemic influence by its blood-curdling accounts of such cases. It is a question in my mind whether the complaisant manner in which the *minutiae* of robberies and defalcations are recited by the newspapers, has not its influence in producing crime.

2. Hereditary impulse independent of percep-

tible physical aberrations. It is possible that habit, persisted in through many succeeding generations, may result in a faulty power of reasoning, which, although not characterized by variations in physical conformation, may yet be transmitted through countless generations.

3. Defective physique and imperfectly developed intellect, hereditary or congenital.

4. Acquired disease lessening the moral sense and will power. Instances of this kind are familiar to all of us. Vicious or criminal acts performed under the influence of acute delirium or mania and due to various diseases, are frequently met with.

5. Injuries to the brain. This cause of crime and vice is a very familiar one, especially to the alienist and neurologist.

6. Alcoholism. To this cause there are many who, in what I consider illiberality, attribute nearly if not quite all cases of criminality. There is no question but that alcoholism is a potent cause of crime, but there are thousands of cases of criminal acts which are apparently traceable to it, yet in which the influence of alcohol is secondary to physical causes inherent to the individual. There were certain interesting facts brought out by the recent Congress of Alcoholism in Paris, which illustrates the importance of the study of the relation of alcoholism to crime. It was shown, for example, that there was quite a constant relation between the amount of alcohol consumed in various social systems and the amount of crime. It is my impression, however, from a study of the statistics developed by this Congress that the survey of the field of criminality had been rather a narrow one, and that certain collateral elements in the causation of crime had failed to receive their due need of consideration. Some of the studies of the Congress were rather interesting in this connection. For example, it was shown that in Berne, where there are only four saloons per thousand of inhabitants, criminality was more prevalent than in Zurich, where the proportion is 12 to the thousand.

7. Vicious example and surroundings—environment. This involves the question of criminal contagion, which is very important in connection with our own defective methods of correction. The herding together of all grades of crime is one of the most pernicious systems that could be devised. In our own city of Chicago, for example, there is no reformatory for young lads, and they are therefore sent to the Bridewell, where they eventually become contaminated by older criminals. This proceeding is as rational as would be the sending of a case of sore throat to a diphtheria hospital.⁴

8. Defective education and consequent imperfect mental discipline. This is a question on

⁴ A movement is now on foot to establish a reformatory in Chicago.

which the progressive physician and the philanthropic politician, if such *rara avis* exists, should be a unit.

9. (a) Perverted conception and mal-administration of the law. (b) Unjust dispensation of the law, statutory and moral. Illogical interpretation of divine law. This cause is of more importance than is usually assigned to it. What may be termed the inequalities of Justice have been responsible for fully as many cases of confirmed criminality as almost any other cause which could be mentioned.

Bishop Robertson once said: "Justice is a pair of huge iron jaws which open and close with mechanical regularity. Nearly every man at some time in his life comes within the legitimate reach of these jaws. Many escape just at the nick of time because they do not happen to be within reach at the time the jaws are open and closing, while others less guilty perhaps, but also less fortunate, are caught."

A very interesting story is told in this connection of two school boys who were stealing apples together. They were detected and pursued. One was caught, while the other one escaped. The one who was captured was sent to jail and thrown among criminals from whom he acquired a moral contagion which infected his after life. After his release those acts which before his incarceration were merely boyish pranks, assumed a criminal character and he became a confirmed criminal. The boy who escaped remained in school and doubtless kept up his mischievous tricks during his school days. He afterward studied law, became a lawyer, and eventually was elected a judge. Twenty-five years after the apple stealing episode the judge sentenced his former comrade to death for murder.

10. Alleged detective science or man-hunting. The manner in which the ambitious modern would-be detective pursues discharged criminals is an apt illustration of "man's inhumanity to man." How frequently it transpires that a criminal leaves the prison gates with the resolve to lead an honest life; he secures a position but the eye of the law is still upon him, and some human tiger in the guise of a detective speedily warns his employer that he is harboring a jail bird. Discharge follows, and perhaps another place is secured with the same result, and so the relentless pursuit goes on and on until the jail bird finds every avenue closed to him except the road back into the jail. Why have we not a Hugo among us to describe the pursuit and persecution of our own Valjeans? It is unquestionably true that the persecution of criminals by would-be Vidocqs does much to keep up the census of our jails. A want of faith in reformation on the part of those who should hold out a helping hand to the criminal, drives many a man back to crime.

11. Physical, moral, social, and matrimonial

mésalliance. This involves the question of consanguinity. It is questionable whether we as physicians will ever succeed in accomplishing much in the correction of this particular cause. The sanitary marriage is the dream of the idealist. If we shoot at the moon however, we may make a pretty satisfactory target though we fall far short of the mark. Gross physical infirmities and certain pronounced mental defects may at least be taken into consideration in the question of matrimony. Proper selection in marriage means means both physical and mental improvement in the race. The human animal is certainly entitled to some of the benefits to be derived from the science of breeding. Authorities are somewhat divided upon the question of consanguinity, yet there are few who are not willing to admit the necessity of careful and ripe judgment in considering the question of the marriage of blood relations.

12. Aberrations and perversions of a sexual character are occasionally the cause of crime, more frequently perhaps than is generally appreciated. Many cases of murder from alleged jealousy are due to sexual insanity. Rapes and various crimes of a bestial character may be due to inherent perversion or to actual insanity. There are many illustrations of crime committed as a consequence of inherent sexual perversion.

13. The intermarriage of criminals. As much as has been said upon this question, it is doubtful whether the correction of this influence by the State is possible. If the privilege of matrimony be denied to the criminal class, illegitimate relations are apt to be established with an even more deplorable result. Such people are not apt to stand on ceremony, and the correction of this cause is therefore more theoretical than practised.

14. Corruption in politics. Under this head I will embrace political encouragement of ruffianism and protection for criminals. A very sad case recently occurred in Chicago of a prominent lawyer who became insane as a consequence of a blow upon the head inflicted by an alleged respectable citizen during a quarrel of a political character. As a corollary of political corruption we have an imperfect and corrupt police system, the keystone of which is the axiom that it takes a rascal to catch a rascal. This cause of criminality must prevail as long as the credentials of an alderman are the qualities of a deep, hard drinker and a good rough-and-tumble fighter.

15. Niggardly and misapplied charity, with consequent failure to relieve actual want. As is well known, starvation and crime are first cousins.

16. The importation of the criminal refuse of the Old World, and what is worse, individuals with fanatical social, political or religious views. The important question of immigration demands more attention than is usually accorded it. It is really one of the most vital issues of the day. The

instance has been known, and quite recently, that nearly ten thousand immigrants were landed in one day at Castle Garden alone, to say nothing of other ports of entry. Were it established that all of these people are respectable and producing elements in American society, they would certainly be a very valuable addition to our population. There is something striking however, in the fact that, although the foreign-born citizens constitute but one-eighth of the total population of the country they furnish one-third of our criminals, one-third of our paupers, and one-third of our insane. In short, the character of our immigrants is so polluted by the wholesale exportation by the Old World of the insane, criminal and pauper class, that every one thousand immigrants furnishes twenty per cent. more of the inmates for our jails, asylums and alms-houses than the same number of American born. This is a cause which must be grappled with by the statesman and not by the philanthropist. Should politics become honest, or approximately so, there is hope for remedying this evil, but under the present system of political quackery a remedy for this cause is like some of the others I have mentioned, more theoretical than practical.

In this array of generalities and necessarily imperfect classification of causes of vice and criminality, it is obviously impossible for me to entirely cover the field, but if I have succeeded in presenting in an intelligible manner ideas which will serve as an incentive for the study of the subject on the part of my intelligent readers, I shall have accomplished my object. As Dumas once said of mendicity: Criminality is "an organized body, a kind of association of those who have not, against those who have." It is high time that the respectable elements of society should begin the study of the causes and prevention of crime in a philosophical manner. If this be done and the philosopher, preacher, statesman, jurist and physician put their shoulders to the wheel and work in unison, the time may come when the criminal class may not be so pronounced a curse in our social system as it is to-day.

PUERPERAL ALBUMINURIA.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY S. P. DEAHOFE, M.D.,
OF POTSDAM, O.

By albuminuria I mean a condition in which albumen appears in the urine. It may or may not be associated with a decided diffuse nephritis; I say decided, for it is more than likely that if albumen exists for any length of time in the urine, there is more or less nephritis.

I have never been able to distinguish between albumen of Bright's disease and that where the

disease does not exist. Semmola, in the *Archives of Physiology*, states that there is a difference in the appearance of the precipitate; and that the albumen of Bright's disease diffuses more rapidly through animal membranes.

A very important form of albuminuria is that found during pregnancy; most frequently in primiparæ, and frequently associated with other symptoms of Bright's disease. The following is a very interesting case:

Mrs. D., aged 32, primipara. Family history: Father was an epileptic; other than this it was good. The patient's previous health had been moderately good, she was not robust, but rather poorly developed. Married October 23, 1887, became pregnant about December 24, 1887. On April 28, 1888, she first noticed that her feet were swelling. This swelling rapidly increased until May 13, when I was called to see her. Her entire body was cedematous, including hands and face. There was difficulty of breathing, due to cedema of the lungs. Heart was acting fairly well. She complained of headache and nausea, but there were neither vertigo nor any trouble of vision. Bowels were constipated. I ordered the urine saved for twenty-four hours and a specimen brought to my office. Amount passed, 16 ozs.; sp. gr. 1032, albumen in large quantity.

I informed the friends of the gravity of the case and put her upon a skimmed milk diet, and gave her tr. digitalis and bitartrate of potassium to increase the urinary secretion, saline cathartics to act upon the bowels, and vapor baths to act upon the skin. The patient continued to grow worse, and on May 17, the sp. gr. of the urine having reached 1038, albumen increased, the prospects of the case rather gloomy, I called for a consultation. Drs. Baker and Brandon met me next day at 10 A.M., symptoms were still growing worse, amount of urine passed during the previous twenty-four hours, 12 ozs., sp. gr. 1040; urine became absolutely thick upon the addition of nitric acid. The result of the consultation was to continue previous treatment not more than forty-eight hours unless improvement took place; if not, to induce labor.

May 19, condition about the same, except increased headache, and a peculiar heaviness of the tongue was noticed in talking. The lips were now also markedly cedematous.

May 20, 8 A.M. Temperature, which had previously been normal, now rose to 100°. The treatment has been faithfully carried out, but the cedema has increased, the urine remains scanty, sp. gr. 1042, albumen very abundant. I made no quantitative analysis, but upon the addition of nitric acid to the urine in a large test-tube it became so thick that it would not run out of the tube when everted.

May 20, 8 P.M., went to the patient for the purpose of inducing labor but, upon arriving at the

house, the symptoms seemed slightly better and, hoping that an improvement was about to take place, I postponed the operation to watch the further progress of the case.

May 21. Temperature normal, oedema slightly diminished, sp. gr. 1032, albumen about the same, possibly slightly diminished. Treatment was continued.

May 22, 8 A.M., temperature 99.2°, sp. gr. 1030, albumen about the same, treatment continued.

May 23, 9 A.M., temperature normal, sp. gr. 1032, albumen about the same, oedema same. Severe headache, slight nausea, and slight, transient dimness of vision complained of by the patient. Treatment continued, except that the cathartics were withdrawn. 4 P.M., severe headache continues, severe nausea and vomiting with pain in the epigastric region now comes on, cannot retain milk. 9 P.M., headache continues unabated, vomiting ceased, dimness of vision now marked, patient says she sees flashes of light before her eyes. Muscular twitchings are now noticed.

10:20 P.M., convulsions. I arrived in a few minutes. The patient had not yet regained consciousness fully. Gave her $\frac{1}{2}$ gr. of sulphate of morphia hypodermatically, and inhalations of chloroform. Mouth was bleeding from a bite of the tongue during the convulsion. 11 P.M. In the presence of Dr. Brandon I introduced a male elastic catheter into the uterus and let it remain. I found the os low down, soft, and open sufficiently to admit the finger. I stayed with the patient all night. She slept most of the time under the influence of the morphia. Has passed no urine since 1 P.M.

May 24, 9 A.M. Has no pain and expresses herself as feeling quite good. 10 A.M., some bloody discharge from the vagina, but no pains yet. 1:30 P.M., passed about 4 ozs. of urine, the first in twenty-four hours, sweating profusely; occasional pains are now noticed referable to the uterus. Temperature 100.5°, sp. gr. 1034, albumen the same. 8:30 P.M., rests quietly, uterine contractions feeble but increasing. 11 P.M., called and found pains much increased; was delivered of a female foetus at 1:40 A.M. without an unfavorable symptom except the temperature, which remained elevated at 100.5°.

May 25, 8 A.M., temperature 100°, slight headache. 10:30 A.M., sweating freely, headache continues, otherwise feels as well as could be expected. Continued the digitalis, bitartrate of potash, and cathartics. 4:30 P.M., was called on account of patient having difficulty in breathing, and found it due to pulmonary oedema, quite marked upon the right side, evidently due to her lying mostly on that side, the vesicular murmur being almost absent. I changed her position to a sitting posture and then to the left side, with relief of the dyspnoea. Urine is much increased, sp. gr. 1020, albumen reduced more than one-half.

From this time on the patient continued to improve. The cathartics were withdrawn and tr. ferri chloridi was added, also lime water was added to the milk on account of some nausea. Dismissed the case June 1.

I might add here that she was again delivered with forceps of a healthy male child May 24, 1889, having passed through her pregnancy without any of her previous trouble.

The subject of puerperal albuminuria has attracted the attention of obstetricians for many years, and is well known to be associated in ways still imperfectly understood with many important puerperal diseases. In the severer cases a well-marked parenchymatous nephritis exists; but if every case of albuminuria in pregnancy is due to a nephritis, it is probably a form of the disease which may neither lead to severe symptoms nor to chronic disease; however, the absence of severe symptoms or the continuance into the chronic form may often be explained by the most rational of all treatment, viz.: removal of the cause. On the other hand, the appearance of albumen in the urine of a pregnant woman, though not calling for active interference, should be regarded as a danger signal, and put the physician on the lookout for other indications of renal disease.

There are a number of theories as to its causation, such as a poor quality of blood, an altered condition of the blood, which, on account of the call for nutritive supply on the part of the foetus, contains an excess of albuminous material. Any condition producing sudden hyperæmia of the kidneys giving rise to a state analogous to the first stage of Bright's disease, such as sudden exposure to cold and impeded cutaneous action.

PRESSURE OF THE GRAVID UTERUS.

Prof. Edes, of Harvard University, thinks that in many instances it is the result of impeded abdominal circulation, although it is rare that the gravid uterus can press upon the renal veins.

Bartels shows that the renal veins occupy a position which secures them from pressure.

Playfair says: "The obvious fact that in pregnancy the vessels supplying the kidneys are subjected to mechanical pressure from the gravid uterus, etc., suggests that here we may find an explanation of the frequent occurrence of albuminuria; that this is further strengthened by the fact that the albumen rarely appears until after the fifth month."

That this last theory is not correct is shown by the history of the case just reported, in which the albumen appeared prior to the fourth month, at which time the gravid uterus could not certainly have pressed upon the renal veins.

The symptoms of albuminuria of pregnancy are by no means constant. Anasarca is probably the most frequent symptom which attracts the attention of both patient and physician, not only

the swelling of the lower extremities, but the face and upper extremities also.

Any puffiness of the face or hands should give rise to suspicion and lead to an examination of the urine. The anasarca may extend throughout the whole body as it did in the case reported, the lungs not escaping. Headache, dizziness, dimness of vision, spots before the eyes, nausea, sleeplessness, irritability of temper, are often met with, and should cause suspicion and lead to an examination of the urine, which is generally scanty and high-colored, and may contain, in addition to the albumen, epithelial cells, tube casts and blood corpuscles. The most formidable of all is eclampsia.

I believe it may be taken as proved that albuminuria is not necessarily accompanied by eclampsia, although the two are almost invariably combined.

Not only is the mother's life in danger ultimately, but there is a strong predisposition to abortion, due to imperfect nutrition of the foetus by blood impoverished by the drain of albuminous materials through the kidneys. Tanner mentions four cases out of seven which he attended that aborted, one of them three times in succession.

TREATMENT.

The treatment should consist of such remedies as tend to promote the secretion of the urine and thus relieve, or at least diminish, the congestion of the renal vessels. Saline diuretics, such as the acetate or bitartrate of potash, will best answer this indication. Purgatives which produce watery motions should be administered. Dry cupping over the loins may have a beneficial effect in lessening the renal hyperæmia. The action of the skin should also be promoted by the use of vapor baths. The diet should consist of skimmed milk, with which may be allowed a little whitefish. Tr. of chloride of iron is excellent, and may be combined with tr. of digitalis, which acts as an excellent diuretic.

In obstinate cases, where all these fail, we must consider the advisability of inducing premature labor.

IS THIS OPERATION JUSTIFIABLE?

Barker says it should be resorted to only after treatment, thoroughly and perseveringly tried, has been without success.

Hofmeier says it does not increase the risk of eclampsia, and may avert it altogether.

Lusk says as far as his experience goes, the practice of waiting upon Nature has proved uniformly disastrous, while the induction of labor has furnished recoveries.

Braun says he has known but one patient to recover between the fourth and sixth months of pregnancy except where abortion has taken place.

I believe it is perfectly justifiable in all cases attended with symptoms of great gravity; and I

should not hesitate to adopt this resource in cases in which the quantity of albumen is great and progressively increasing, and in which treatment has been of no avail, and especially if attended with such symptoms as severe headache, dizziness and loss of sight.

As it is not likely to be indicated until the child has reached a viable age, although in my case it will be noticed that it was much earlier, and the child's life is in danger from the albuminuria, we are justified in performing the operation for the mother's safety alone.

THE MEDICO-LEGAL ASPECT.

This involves a question of medico-legal importance. Charges of inadequacy of cause for its performance may be made, and the physician should take all precaution to avoid these, and thus save him the unpleasantness of a prosecution for a criminal offense.

Tidy says (Vol. iii, p. 100): "It is manifest that if any question should arise or action at law be commenced against a medical man for inducing abortion, it would be necessary to show: 1, that there was a necessity for the operation, the life of the mother being at stake, and the operation being less to be feared than natural delivery; and 2, that his action was *bona fide*."

Now, it may be difficult for a practitioner to successfully defend himself against a charge of inadequacy of cause for its performance, owing to the increasing number of conditions which justify the induction of premature labor; therefore we urge upon medical men, 1, not to induce premature labor or abortion without the most mature deliberations; 2, not to undertake it until after consultation with a second practitioner; 3, in any case to have the full consent of the husband or guardian, in writing, if possible.

Taylor says (p. 592): "This practice has been condemned as immoral and illegal, but it is impossible to admit that there can be any immorality in performing an operation to give a chance of saving the life of a woman when, by neglecting to perform it, it is almost certain that both herself and the child will perish.

"Any question respecting its illegality cannot be entertained, for the means are administered or applied with the *bona fide* hope of benefiting the female, and not with any criminal design."

When eclampsia supervenes what shall we do? Shall we attend to the convulsions and let the labor take care of itself, as Gooch says? There seems to be a difference of opinion upon the subject, one advising the immediate emptying of the uterus, others who leave the labor entirely alone. Evidently that course which seems least likely to prove a source of irritation to the mother is the one to adopt, and the practitioner must exercise his own judgment as to what course he will pursue. But when convulsions come on during the

earlier months of pregnancy, as they did in my case, there seems, to my mind at least, to be no doubt as to the course to pursue, viz.: to bring on labor with the least possible irritation to the mother. The introduction into the uterus, without rupturing the membranes, of a flexible male catheter, seems to be the best way.

To control the convulsions there are several remedies recommended. If the woman be a strong, healthy one, with marked evidence of great cerebral congestion, and vascular tension, such as a full, bounding pulse and a livid face, venesection is a valuable remedy. Of the sedatives which are useful, chloroform probably stands at the head of the list. Hydrate of chloral, per rectum, or in combination with bromide of potash per os, is highly recommended. That which served me best was hypodermatic injections of morphia in $\frac{1}{2}$ gr. doses, together with inhalations of chloroform intermittently.

THE TREATMENT OF PLACENTA PRÆVIA.

Read by Title in the Section of Obstetrics and Diseases of Women, at the Forty-first Annual Meeting of the American Medical Association, May, 1890.

BY AUGUSTUS P. CLARKE, A.M., M.D.,
OF CAMBRIDGE, MASS.

I am not unaware that much time and attention have been given to the subject of placenta prævia, but the high rate of mortality that has obtained among the mothers and the children, whatever method of treatment employed, is sufficient apology for bringing the subject before this Association. During four years in the Leipzig clinic, Oberman¹ had sixty four cases. The mortality of the mothers was eleven per cent. That of the children fifty three per cent. The treatment employed was Hofmeier's, or as it is sometimes called, the Berlin method. Version combined with external and internal manipulation was employed in cases which were attended with hæmorrhage. The head of the child was brought to the os uteri, and maintained there as a tampon. Massage of the fundus uteri was employed during extraction. Iodoform tampons are advised only in hæmorrhagic cases arising in the earlier stages of pregnancy. The foetal mortality attained as high as 83.4 per cent. when bimanual podalic version was carried out according to the method followed by Behm and others.

Some authorities have thrown out altogether consideration for the child's life, and have brought the pregnancy to a close as soon as it was discovered that placenta prævia existed, and uterogestation had passed the mid-term. There are other authorities not so radical. They advocate the expectant method of treatment. They wait

until hæmorrhage becomes serious before they resort to the induction of premature delivery. Parvin² regards the child viable in the seventh month.

From his experience, hæmorrhage, in the majority of cases, does not come on prior to that time; and protection can be afforded the child, if it can escape the dangers incident to birth.

His most serious consideration is, how can delivery be affected with reasonable degree of safety to the child, without endangering the mother. Parvin offers no newer method, but refers to Zweifel's suggestion for manner of conducting podalic version. The obstetrician for the purpose of making version, should pass one or two fingers anteriorly.

By this means a much further entrance can be made into the uterus, and less violence will be done to the attachments of the placenta. The author here referred to, would conjoin the hydrostatic pressure of Barnes, with the partial detachment of the placental mass, as being the best method of treating placenta prævia after the labor has so far advanced that the vaginal portion has disappeared. This plan, it is claimed is most conducive alike to the safety of the mother and the child. Barnes advises that sufficient dilatation should be obtained, before delivery can safely be accelerated by forceps, by turning or by embryotomy. If turning must be resorted to, the forceps should be used to prevent the delay in the passage of the foetal head, and to relieve the constriction of the only partially dilated cervix. Barnes does not approve of Simpson's method, the entire removal of the placenta before the birth of the child. To hasten labor he would rupture the membrane and separate the portions of the placenta that are adherent within the lower zone. His line of conduct is wholly regulated by the occurrence and the absence of hæmorrhage. Tampons are used, but not relied upon to protect against hæmorrhage. A firm binder is applied over the uterus.

Cases in which the uterus fails to act, dilatation is aided by water bags. Forceps are preferred to version, when the head presents. Hæmorrhage usually ceases after full canalization of the passage, and the placenta is detached from the lower zone. McDonald,³ after the seventh month, would not wait if the hæmorrhage is severe. He first ruptures the membrane, applies a binder over the uterus and gives ergot.

He has experienced great difficulty in using Barnes' hydrostatic dilators. He prefers using one or two fingers, sweeping them round in a circle so as to separate as much of the placenta as is within reach. He exercises lateral pressure on the os uteri to accelerate the labor. If

² Theophilus Parvin, M.D., Philadelphia, Med. News, 1888.

³ Dr. Keith N. McDonald, Edinburgh Med. Jour., also Braithwaite, part 90, p. 272.

¹ Braithwaite's Retrospect, part 98, page 309.

the presentation is not a natural one, he introduces the fingers in the shape of a cone into the os uteri, and retains them there for a while. The uterus is to be steadied, but pressed down until the hand gains admission into the cavity of the uterus. He passes the hand, if necessary, through the placental mass.

Both feet, if in reach, are brought down at once. Of the 4,515 cases delivered in the Rotunda Hospital,⁴ Dublin, during the three years ending November, 1886, there occurred twenty-three cases of placenta prævia. There was a material mortality of four deaths, three of which were complicated with other serious affections. The fœtus was lost in eleven cases. If the presentation was normal, the membranes were ruptured; this caused the presenting part to act as a tampon. Intro-external version was performed. A leg was brought down to act as a plug until expulsion took place through natural efforts, or was aided by artificial means. Against the practice of passing the hand through the placental mass many objections have been urged. Rhamsbotham was opposed to this practice. He refers to Deleurye who presented arguments strongly against the practice. In some cases in which it was necessary to let off the liquor amnii, Deleurye recommended that the placenta be pierced by an instrument. The chief objection against the practice of perforating the placenta with the hand, must always be because of the difficulty in the execution. An attempt to penetrate with the hand or the fingers the placenta, is liable to be followed by a displacement of the placental mass. Such displacement might bring on immediate uncontrollable hæmorrhage with a fatal result. It is true, as it was known even to Smellie and to others, that the placenta is sometimes so soft and undeveloped or retrograded, as to be easily penetrated by the fingers, but such a condition cannot be relied upon as existing in the usual cases of placenta prævia. It is an undoubted fact, that the larger vessels permeating the placenta, may sometimes be wounded or lacerated as the open sinuses and vessels are, when the placenta is forcibly detached as was done by Simpson and his followers.

In such cases the immunity of the mother or of the fœtus from danger, can only be ascribed to phenominally occurring uterine contractions, that immediately constrict the vascular tissue to such an extent as to avert the dangers of hæmorrhage incident to the mother, and those of asphyxia to the child. My own experience, based upon careful observation and study, has deepened my conviction that the practice of perforating the placental mass in the great majority of cases of placenta prævia, is not to be commended; nor is my experience favorable to the

practice of the entire removal of the placenta before the birth of the child, as has been so often advocated by high authorities. I believe that such a practice was founded on a mistaken view of the physiology of some of the functions of the parturient organs. In central implantation of the placenta, Barnes⁵ recognized the fact, that there is an enormous ectasia of the vessels. This condition often leads to hyperplasia, the transudation of serum from the vascular channels. The vessels become expanded, the tissues swollen, hard and unyielding. When the implantation is wholly central, the area of growth is more limited than when the seat of the placenta is at the fundus or at the side of the uterus.

Added to this there is often an absence in great measure of the natural stimulus for a speedy accomplishment of labor owing to the undeveloped condition of the child. In the treatment of six consecutive cases of placenta prævia occurring in my own practice, I recognized the fact that the ectasia of the vascular development in the cervix was not uniform.

In the area of growth in almost every case, some portion of the marginal implantation was much more limited than others. After ascertaining the point offering the least resistance, and where the vessels were the smallest, I effected separation of the placental attachment, sufficient to admit the index finger. Careful inspection of the point or points of previous hæmorrhage, often proved quite sufficient to warrant an attempt to make separation of the placental attachment. Firm tamponading to guard against undue hæmorrhage from the open vessels was resorted to. After inserting one or two fingers between the tampons and the detached portion of the placenta, the membranes were sought for. If the cervix was hard and unyielding, no attempt was made to rupture the membrane, until evidence was had that the cervical tissue was soft and yielding, and the lower segment of the uterus contracted at intervals. The administration of ergot was not followed with beneficial results. Kneading or regular massaging the uterus above, contributed greatly to the relaxation of its lower segments. The binder was employed. As the fundal and equatorial zones of the uterus contracted, the lower ones relaxed. On the occurrence of this condition, the tension of the placental vessels was found to be greatly diminished. This gave me full control over the points of hæmorrhage.

In all cases much attention was paid to details. Strict antiseptic precautions were instituted at every step of the proceeding. Until the birth of the child was complete, connection of the placenta, as far as possible, with the cervical tissue was maintained. By the employment of this method of treatment in the six consecutive cases of cen-

⁴ See Dr. Fleming on "The Treatment of Placenta Prævia," *Lancet*, Jan. 15, 1887.

⁵ *Lancet*, 1879; also Braithwaite, part 81, p. 218.

tral implantation of placenta prævia, not a single death of the mother occurred, and only one death among the children. The cause of the death of that foetus, however, was not due to the existence of placenta prævia, but to hydrocephalus in the child.

The mother was phthisical, and the placenta was found to have undergone fatty degeneration. In two of the cases of this series, hæmorrhage occurred at the close of the seventh month; in two, at the close of the eighth month; in one, after the eighth month; in the last, near the close of the ninth month. In another series of eight hundred obstetric cases occurring in my own practice, there were four cases of placenta prævia. In two of the cases hæmorrhage occurred at the seventh month; in the third case, hæmorrhage did not appear until the second week in the eighth month; in the fourth case there was no hæmorrhage until the close of the ninth month.

This last patient was a primipara. The os and cervix were rigid and swollen. The hæmorrhage at first was moderate, but it gradually increased and at length became alarming.

Careful examination revealed that the placental vessels at the left and posterior aspect of the cervix had broken away. Tampons of iodoform wool and gauze were firmly applied.

This controlled the hæmorrhage for the next twenty-four hours, after which the cervix was more yielding. Further resistance was easily overcome by digital and manual dilatation.

The vaginal introitus was irrigated with warm sublimate solution. The iodoform tampons were continued. On the third day labor pains came on; these were encouraged by the application of the binder, and by massage to the fundal and equatorial segments of the uterine tissue. As the labor progressed, hæmorrhage ceased. The placenta was not fully detached until after the child was born, but was carried to the right and supported by an assistant using napkins dipped in a warm solution of bichloride. The child did well and the mother made a good recovery. I have no doubt that had I ruptured the membrane when first called, and attempted podalic version by internal and external method, the child would have been asphyxiated before the rigidity of the os and cervix could have been overcome, even if the subsequent expulsion of the head had been aided by the application of the forceps, as has been sometimes advised. In one case of this series, hæmorrhage occurred after the close of the seventh month; in one, during the first week of the eighth month; in the third, hæmorrhage did not appear until after the second week of the eighth month; in the fourth there was no alarming hæmorrhage until the close of the ninth month. In the first two cases of this last series, the mother survived. The foetus in one was still-born; the cause of its death was congenital ab-

dominal fissure. In the third case both mother and child survived; in the fourth the mother survived as above stated. In reporting these cases, I do not wish to lay claim as yet to any special method of treatment, for I am not unmindful that the outcome of the treatment of another series may be altogether different.

In the presentation of these cases, I can only commend for consideration, the method I adopted, in preference to others more radical in their nature, and which have so often been attended with unhappy results.

For, according to Churchill,⁶ it has been estimated in placenta prævia, that material mortality is as one in three.

Read has estimated as one in four and a half, and Barnes as one in ten and two thirds. Says Fitzpatrick, the dangers from prematurity, asphyxiation and malpresentation are very great. According to the same high authority, Churchill estimates that half the children are lost. In this connection there is a point in the treatment that should be emphasized, and it is this. It often happens that those who are engaged in the practice of obstetrics, and who may become exceedingly expert in detecting the various positions of the foetus and in conducting examinations, and in passing judgment upon methods of treatment, have really no surgical knowledge.

The nature and kind of training they have received, have not fitted them to meet and cope with the emergencies arising from the occurrence of a severe case of placenta prævia.

Knowledge to meet such emergencies can be obtained only by long, tedious and constant practice, and in purely surgical and gynecological cases. As the obstetrician has not, as a rule, the trained hand of the surgeon, the case is frequently hurried to an early close, often at the expense of the mother, and more often at that of the foetus.

SPECIFIC TREATMENT OF TYPHOID FEVER.

Read in the Section of Practice of Medicine, Materia Medica and Physiology at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 22, 1890.

BY J. H. VAN EMAN, M.D.,

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While it might seem the subject of the treatment of typhoid fever is well worn, and that but little progress has been made in its treatment during the last decade, it is yet true that much diversity yet obtains as to its therapeutics, and its rational and specific treatment is far in the rear of both its etiology and pathology.

Long before the microscopic discoveries of Koch and other investigators, the thinking members of the profession recognized the fact that

⁶ *Lancet*, April 6, 1889.

there was a specific cause for typhoid fever, and many other diseases, and attempts were made at various times to make such application of drugs that the disease-producing ferment of poison might be either neutralized or destroyed in the blood, and thus cut short a disease which, under other conditions, either lasted until death ended the scene or the fire ceased to burn for want of fuel.

Without any understanding of the necessary environments for the growth and proliferation of the poison, many different lines of treatment were carried out, with the intention of either cutting short the disease, or at least of lessening its severity.

One of the earliest plans of specific treatment was based on the supposition that the excretions of the microbe of typhoid fever was intensely alkaline, and as no living organism can exist for any length of time in its own excretions, large doses of nitrite of ammonium, reinforced by other ammonia salts as certain indications might require, were used. By this plan of treatment the author (a surgeon in the late Confederate Army) claimed the organisms producing typhoid fever were rapidly destroyed, and in a series of two hundred and twenty-five cases he claimed not a single death occurred.

By repeated and continued doses of calomel, German physicians claimed to greatly reduce the death-rate. Of later date the use of the salicylates, and more especially the salicylate of ammonium, have been highly lauded. The sulphites have also been used for the same purpose; also combinations of iodine and carbolic acid, known as the Bartholow treatment.

Many other plans of treatment, having for their object the destruction or neutralization of the typh-poison, have been tried, but time will not permit further notice of them in this paper. The general plans of treatment, however, have been the so-called expectant, *i. e.*, by meeting the dangerous symptoms as they arise, and thus obviate the tendency to death, be it coming from whatever direction it may.

From almost the earliest history of the disease the mineral acids have held a prominent place in the treatment of typhoid fever; not, however, as a poison destroyer, but as a tonic. They were supposed to assist in keeping up the vital forces until the fever had run its course. All these many years, however, the faculty were combating the destructive effects of an unknown something, a *contagium vivum*, whose effects, both pathological and lethal, were thoroughly understood. Of the laws that governed its growth and reproduction, even of the means by which it entered the human organism, almost absolutely nothing is known.

Within the last decade, stimulated by the investigation of Pasteur, of Koch, of Sternberg,

and of hundreds of other active, thinking, working members of the profession, darkness is rapidly being superseded by light, and we are fast recognizing the truth that all our contagious and infectious diseases are caused by a living entity within the body; a germ that has shape, and form, and laws of self-preservation, and reproduction, just as definite and positive as of any living organism. The veriest tyro in medicine is beginning to understand something, at least, of the life-history of bacteria and their agency in the production of diseases.

In the early part of the fall of 1889, following up the conditions under which pathogenic germs can be cultivated and reproduced, my attention was particularly drawn to the fact that all such germs could only be cultivated in an alkaline medium, and with the converse of this truth, as well, that let a culture fluid, perfect in every other respect, be either intentionally or accidentally made even slightly acid, the germ growth was at once arrested, and not only that, but the germs already in existence soon become feeble and then cease to exist.

It struck me like a revelation, that for the long-continued popularity of the acid treatment of typhoid fever I had found a rational hypothesis. More than that, it occurred to me that I had found a plan of treatment that promised to reduce the proliferation of the typh-poison within the body to the minimum, and possibly to entirely arrest it by a therapeutic agent that would have no deleterious effect on the human organism. Other germicides, such as the mercuriates, carbolic acid, etc., will, when introduced into the body in sufficient quantities to destroy the disease germs, destroy the patient as well.

Acting on my theory, I at once began the treatment of my typhoid cases, as soon as I was reasonably certain of my diagnosis, as follows: For the first 36 to 48 hours I gave calomel in five to ten grain doses until I had very thoroughly cleansed out the alimentary canal, for the purpose of either sweeping out or destroying all typh-germs that had not migrated from the intestine. While doing this I sterilized all foods and drinks, thus preventing the ingress of new germs. This being done, I put the patient on half drachm doses of dilute muriatic acid given in syrup and water, every three hours, night and day. Now as to results. In six cases thus treated, all recovered. In all diarrhoea was promptly arrested and never gave any further trouble; in fact, some little attention was required to keep the bowels open. In no case, after the institution of this treatment, did delirium occur. Neither sordes nor dry cracked tongue in any case. In five of the cases the duration of the disease was under twenty-one days. No complication existed, and convalescence was uninterrupted and unusually rapid. In none of the cases did the evening tem-

perature go above 103° after treatment was well commenced. In one case only, which began with an attack of la grippe, was protracted in its course, lasting nearly five weeks and having as a complication hæmorrhage of the bowels, which, while rather profuse, was readily controlled by morphine and ergot per ore.

It is true that six cases are a small number on which to base an opinion or tabulate results, yet the subject seemed to me to be of such vast importance, and the results obtained so marked, that I felt it a duty to bring the subject before the profession, hoping that many others might take up the work and by the next meeting be able to report results.

NOTE ON NASAL HÆMORRHAGE.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY FRANK HAMILTON POTTER, M.D.,

OF BUFFALO, N. Y.

LECTURER ON DISEASES OF THE NOSE AND THROAT IN THE MEDICAL DEPARTMENT OF NIAGARA UNIVERSITY.

The object of this short note is to call attention to the symptom of bleeding from the nasal passages depending upon or associated with deformities of the septum, especially of its anterior portion. This observation is not new, but will be found in most of the works treating of nasal diseases. We find, however, that as a rule, the writers consider that the hæmorrhage is caused by a slight erosion located at some point of the deformity. For instance, Bosworth¹ says:—"Slight deformities of the septum are probably the cause and source of an epistaxis more frequently than any other lesion met with in the nasal cavity, the apex of the projecting portion becoming the seat of a slight erosion, probably as the result of attrition by the dust-laden current of the inspired air. In this way the walls of the blood-vessels become thin, while at the same time the eroded surface forms a site for the formation of dry crusts." This opinion may be accepted as fairly representing the views of the profession on this point. Yet it does not cover all the cases of epistaxis associated with these deformities. Some severe cases of bleeding occur without any erosion whatever, at least any that careful observation can detect. It is to this class of cases that your attention is directed. In studying these cases we must eliminate as causes of the hæmorrhage, 1, traumatism; 2, constitutional or systemic conditions; 3, vicarious menstruation; and 4, other local morbid conditions. We find simply an extreme thinness of the pituitary mucous membrane, due primarily to the presence of a deformity. There is no erosion. The hæmorrhage is often severe and difficult to control. It is intermittent. It may occur either upon the convex

or concave side of a deflection of the anterior part of the septum, or upon both sides. Sometimes, where there is thickening of the septum without deflection, we have observed hæmorrhage to occur from the same cause. The mucous membrane appears to become at these points extremely thin, and unable to withstand the blood pressure. I know of no pathological investigations of this condition, and speak only from a clinical standpoint. While it may not be strictly accurate to use the term "thin" in this way, it expresses very well the clinical features of these cases.

To illustrate how severe these hæmorrhages may be occasionally, I recall the case of a man aged 46 years, in good health and without constitutional disease, who, from repeated bleedings during about fifteen days, reduced his weight ten pounds, and was found in bed weak and frightened. Fear, of course, is an element to be considered in such a case, the loss of blood not answering entirely for the patient's condition. The treatment of these cases involves the removal of the deformity or the cauterization of the bleeding surface. When the deformity is sufficiently large to cause obstruction to respiration through the nostril, the thickened or deflected portion should be removed, preference being given in this operation to the fine nasal saw. Or where the deformity is sharp and projecting, even if not large enough to cause obstruction, it may be removed in a similar manner. As the wound heals and a new membrane is formed, we will find that the hæmorrhage will disappear. When the above conditions are not present, or when the bleeding takes place from the concave side of a deflection, the surface should be thoroughly cauterized. For this purpose I generally prefer chromic acid fused on the point of a probe. In this way each bleeding point can be touched. Frequently we find that these points are located at the union of the triangular cartilage with the vomer and the perpendicular plate of the ethmoid, and it is well to be especially careful in looking along these sutural lines. It may happen that a single cauterization will not be sufficient. The scab that usually forms after the application of chromic acid will not cling to the parts, or even fail of formation altogether. In such a case it must be reapplied as soon as we find the hæmorrhage recur. Sometimes I have found it necessary to apply it four and five times before success was obtained. Never has it failed when followed up in this manner. Of course the usual after-treatment is to follow, both after the removal of the obstruction and the cauterization, that now pertains to the proper performance of nasal surgery.

This treatment can be followed also when an erosion is present and the cause of the hæmorrhage, but then the indication is so plain that any one would naturally treat it in a proper manner. It is in these rather obscure cases, that could

¹ "Diseases of the Nose and Throat," Vol. I, p. 311.

be easily overlooked, that care must be exercised and treatment promptly determined upon.

The annoyance and even danger of these repeated hæmorrhages, and the difficulty many times in locating the places where they occur, warrants this brief reference to a very simple matter.

MEDICAL PROGRESS.

THE RELATION OF GENITAL DISEASES TO SKIN AFFECTIONS.—DR. FRANK (*Zeitschrift für Heilkunde*) describes a case of chronic urticaria caused by genital disease, which was observed in the gynecological clinic of Prof. Schanta, in Prague. The patient, a sewing woman, 28 years of age, had menstruated since her sixteenth year without difficulty until three years previously. Then her flow was accompanied by headache, an eruption of vesicles upon the back, forehead, cheeks, and extremities; also pain in back and cramps in the abdomen, and a profuse leucorrhœa. The skin symptoms always followed the menstruation promptly, so that in a couple of hours most of the body was covered. The gynecological examination revealed chronic oöphoritis and bilateral salpingitis. On Oct. 16, 1888, both tubes were removed, and eight months later she reported that the menses were not painful and that the skin eruption had entirely disappeared. The explanation of this case lies in regarding urticaria as nervous oedema, and that in the above-mentioned case the relation shown between the genital and skin affection was caused by frequent attacks of pain that increased the sensitiveness of the nerves, especially those governing the vascular supply of the skin.

ANTISEPTIC TREATMENT OF VARIOLA.—M. BIANCHI has described (*Lo Sperimentale*) a treatment that has been attended with excellent results in 96 cases, 22 of which were slight, 39 grave, and 15 very severe. He commences with a full tepid bath of a solution of 1:20 of boric acid; during this bath the patient is covered with an antiseptic soap. During the course of the disease the patient is bathed every four hours with a solution of 1:1000 of corrosive sublimate or the boric acid solution. After these bathings he is anointed with iodoform and vaseline, 1 to 5 parts in the hundred, according to the gravity of the case. All the pustules are opened with an aseptic needle, and their contents evacuated. The patient is then enveloped in aseptic linen that is frequently changed; all objects in the apartment, the floor and walls, are washed every two days with a solution of sublimate 1:200. This treatment diminished notably the duration of the eruption, lessened fever, and prevented se-

vere ulceration and scarring, procuring a relatively favorable condition of the patient and rapid convalescence. It is also of great prophylactic value, as direct contagion will be difficult, and at a distance impossible, because not only the person, but the bed, air, and surroundings of the patient are rendered thoroughly aseptic.

THE INFLUENCE OF DRUGS ON ABSORPTION. The importance of a knowledge of the process of absorption taking place in the intestine cannot be over-rated, and consequently any addition to our information on this subject is to be welcomed. The absorption of drugs by the intestine has been very little investigated, and it is on this point that LEUBUSCHER, of Jena, has made some experiments. The process of absorption must no longer be considered a purely physical one, but a function of living cells, so that any causes which may injuriously affect the life of these cells will also interfere with proper absorption. The cells may be altered by influences acting directly on themselves, or through the blood current, or through means of the nervous system. With regard to direct injury of the cells, Leubuscher experimented by isolating a small coil of intestine in a living animal by means of light ligatures, and then injecting a strong solution of a mineral acid, washing this out with water and introducing a known quantity of grape sugar in solution. Compared with a normal intestine, the quantity of grape sugar absorbed was considerably lessened. In other experiments, the artery supplying the coil was tied, or the vein leaving it, producing in the one instance anæmia and in the other congestion; in both cases, but more especially in the latter, absorption was greatly interfered with. Investigations as regards the third division—namely, the effect of the nervous system—could not be fully carried out. The action of various drugs was then tried. Grape sugar and a solution of iodine in iodide of potassium were used as tests of the power of absorption, and the following drugs were selected: quinine, opium, alcohol, glycerine; also weak solutions of common salt and Carlsbad waters. Coils of intestines were exposed and isolated in two animals. In one the grape sugar or iodine solution alone was injected, and in the other the same mixed with the drug to be tested. The results were afterwards corroborated in animals in whom an artificial intestinal fistula had been secured. Quinine, opium and morphia, even in weak solutions, interfered greatly with absorption. Morphia acted in the same manner when it was introduced into the system by means of hypodermic injections. Alcohol in weak solutions (5 to 2 per cent.) increased absorption, but in larger quantities hindered the process. Glycerine produced no decided effect, weak solutions of common salt increased, and Carlsbad water had no effect on absorption. A few exper-

iments were also tried by estimating the quantity of iodide of potassium passed within a certain time in the urine of patients after a dose of this drug had been administered by the mouth, the iodide being dissolved either in water, alcohol, glycerine, Carlsbad water or milk. With alcoholic solutions the quantity was increased as compared with the watery solutions; with glycerine, this was the same as with water; Carlsbad water also increased it, but milk lessened the quantity. —*Lancet*.

ACTION OF URINE ON TISSUES.—This subject was recently discussed before the Société de Biologie. The older surgeons considered infiltration of urine as a grave accident, particularly in preventing the union or cicatrizing of wounds. This opinion is erroneous in more than one point, as the clinic daily demonstrates the negative. On the other hand experimental researches of Guyon and Buchard have shown that urine alone is aseptic. That it becomes hurtful after alteration, due to the accidental development and multiplication of the pyogenic bacillus which give the urine irritating properties, ramified in certain cases by gangrenous and diffuse phlegmons. In his turn M. Tuffier, in experimenting upon animals, has once more confirmed the views now all but universally admitted. They fully support some recent surgical operations that seem bold to the point of rashness, such as the resection of the vesicle wall for neoplasm, etc. Genito-urinary surgery is, like other branches, dependent largely upon experimental work for its further advancement.

STERILITY IN THE MALE.—CASPER (*Berlin Klin. Wochenschr., Rev. d. Sci. Med.*) has observed the following curious and interesting case: A man of 30 years had been married two years, to a young woman who presented nothing that would account for the barrenness of their marriage. The husband had an inflammation of the urethra, complicated by left epididymitis eight years before, but no evidence of antecedent syphilis. The sexual organs presented a normal conformation, testicles of normal consistence, but on the upper portion of the left epididymis was an induration the size of a bean. The prostate and seminal vesicles were normal. The urethra readily allowed the passage of a No. 22 Charrière. The lymphatics were generally indurated, especially those of the groin. A red, dry ulcer was found on the posterior wall of the pharynx as well as ulceration of the right tonsil. Semen was normal in appearance but contained no spermatozoa. After two weeks of specific treatment, five spermatozoa were observed in the semen, and after an additional two months as many as 20 spermatozoa could be counted in a single field. At this time the wife conceived, and at the

end of less than ten months was delivered of a child presenting all the signs of hereditary syphilis. The mother remained free from all signs of syphilis.

The author closes the article with some observations upon the two forms of masculine sterility; the absence of the spermatic fluid and azoospermia.

PREMATURE LABOR.—At the meeting of the International Medical Congress, in the Section of Gynecology and Obstetrics, the discussion on the Indications and Methods for producing Premature Labor was opened by DR. PARVIN (Philadelphia) in an eloquent address, in which he briefly referred to the fact that out of some thousand cases nearly seven-eighths require premature labor for deformities of the pelvis, and these cases must be decided on the degree of deformity. He then recounted the various diseases in which it might be required for the sake of the mother, such as albuminuria, in which he considered it but seldom necessary, even in cases that went on to eclampsia, quoting Gooch's well-known aphorism; in cardiac diseases also he employed it but exceptionally, but frequently had recourse to it in pneumonious disease, where it gave satisfactory results, more especially in acute lung affections, where dyspnoea was a prominent symptom. In obstinate vomiting as well as in chorea it might occasionally be required, but only after all other means had failed. For the sake of the child it became necessary in cerebral apoplexy, and in some cases of cholera. Professor Macan (Dublin) discussed the ethical side of the question in pelvic narrowing, and dwelt fully on what he called the "proportionate value" of the mother's and child's life. He stated that in Ireland and other Catholic countries the question was to some extent affected by the religious aspect, but that notwithstanding the great improvements in the Cæsarean section and its lessened mortality, the final decision between it and craniotomy rested with the mother. Whatever method was adopted should be carried out with the most rigorous antiseptics. Dr. Dohrn, while admitting the great improvement in Cæsarean section, contended that there was still a wide field for premature labor in which it was of the greatest benefit. Dr. Calderini recommended that in the case of a living child premature labor should not be induced when the true conjugate diameter was under seventy-five millimetres.

ABDOMINAL SECTIONS BY PROFESSOR MARTIN.—On Wednesday morning, August 6, DR. MARTIN, of Berlin performed three abdominal sections at his private hospital in the Elsasserstrasse before a company of distinguished foreign operators. Each patient was chloroformed in her ward, then carried upon a couch with wheels to a room where the abdomen was thoroughly washed

with sublimate, the pubis shaved, and the urine drawn off. The visitors, at the request of the operator, entered the operating theatre divested of their coats and waistcoats. The operator and his assistants were in a yet more complete undress uniform. The patient was brought into the theatre, underwent a fresh washing, the juice of a lemon being lastly squeezed over the abdominal integuments. The operator sat between the patient's thighs, the chief assistant—also sitting—was placed to the patient's left. In all three cases the operation was performed with great rapidity, and the abdominal incision was made very long, almost reaching the umbilicus, although in no case was a large tumor present. The wound was also closed quickly by means of stout catgut sutures, not placed closely together. In the second case a suppurating tube was removed from the right side. In the third an intraligamentary ovarian cyst was enucleated. The first operation was of great interest. An interstitial myoma of moderate size was present. The uterus and its appendages were drawn out of the wound, and the vessels of the broad ligament temporarily secured by means of large pressure forceps. Then a vertical incision was made, extending down the back and front of the uterus, passing over the fundus. The myoma was next enucleated. The capsule was treated after Dr. Martin's special method; none of its substance was cut away, but its raw surfaces were united by deep, and its cut edges by superficial, catgut sutures. The forceps being removed, the sutures and appendages were replaced in the pelvis. In none of the cases was flushing or drainage employed. The instruments were immersed in a 2 per cent. solution of carbolic acid. For the washing of the patients and the operator and assistants a 1 in 1,000 solution of sublimate was employed. The spray was not used.

REMOVAL OF A PORTION OF THE LIVER.—M. TERRILLON reported to the Académie de Médecine (*La Semaine Médicale*) the case of a woman who presented herself at the Salpêtrière with a large, painful tumor in the region of the false ribs on the right side. It was determined that this growth sprang from the liver. An exploratory puncture was made at the highest point of the tumor, which gave exit to a few grams of liquid resembling that found in hydatid cysts. Notwithstanding that this slight operation had diminished the size of the tumor, a laparotomy was decided upon. The opening was made in the right side parallel with the false ribs. A portion of the liver, as large as two fists, presented itself, literally stuffed with innumerable small hydatid cysts. It was determined to remove the tumor, but as it was directly continuous with the tissue of the liver, excessive hæmorrhage was feared. To avoid this an elastic ligature was thrown about

the growth, to form an artificial pedicle. The diseased part separated by the elastic ligature was secured to the outer wall of the abdomen. At the end of seven days this portion mortified and separated in the line of the ligature. There remained an ulcer, the base of which was formed by the necrosed liver tissue, separated from the peritoneal cavity by the free adhesions which had formed. After six weeks the ulcer was completely healed, and the patient in excellent health.

INFECTIOUS ORIGIN OF TETANUS.—The view that tetanus is (*Bulletin de la Gazette Médicale*) infectious has long been prevalent in France and other countries. Recently LEYDEN has reported to the Society for Internal Medicine of Berlin, three cases of tetanus in man, one of which was cured. In the three cases the bacillus of Nicolaïer was found in the neighborhood of the "tetanic" wound; inoculations successively upon the mouse, rabbit and dog producing the characteristic disease in each instance. With the first two animals the result was fatal. The interesting conclusions in these cases relate to pathogenesis and treatment. We can believe with Leyden that tetanus is a virulent disease, the symptoms being caused by the contact of the poison with the nervous centres, without the intervention of anatomical lesions that are problematical. For the same reason we can admit that the chances of a cure augment as the disease lengthens, and if the patient survive the sixth day there is a good chance of recovery. The indications for treatment point more strongly to local antiseptics, than in any other microbic or virulent disease.

ACUTE GONORRHOEA.—SCHWIMMER especially recommends the following injection in acute gonorrhoea:

R. Salicylate of mercury, .01 gr.
Water, 100 grs.

The injections to be used three times daily. At the end of three or four days the discharge has, as a rule, become mucous in character, when the remedy is to be discontinued. For chronic cases he recommends the same drug in a strength of 5 centigrams to 100 grams of water.—*L'Union Médicale*.

TREATMENT OF HERPES TONSURANS.—CHARON (*Journal de Médecine de Bruxelles*) claims excellent results in the treatment of this troublesome affection by Reynold's method, that consists essentially in making use of the cataphoric action of the galvanic current. The positive pole, covered with a sponge saturated with a 1 per cent. solution of bichloride of mercury, is placed over the affected portion of the scalp, and the negative pole upon some indifferent point, *i. e.*, sternum or back. The application is continued for fifteen to thirty minutes, and is said to be followed by prompt improvement.

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SATURDAY, SEPTEMBER 27, 1890.

JEQUIRITY.

The papers on jequirity and the discussions thereof which were listened to with great interest and profit at the meeting of the American Medical Association held at Nashville, and which have recently appeared in the pages of THE JOURNAL, revive for a moment the lagging interest in the remarkable history of this drug. Many of the remedies which the last decade has brought to light have had a more or less chequered career. Some of them have enjoyed a certain amount of popularity in their day, and have been relegated to a deserved, and sometimes an undeserved oblivion. Others, which brought with them unquestionable elements of success, have stood the test of time, and are come to stay, while others obscurely lived and died between the covers of some bulletin of materia medica. Few remedies, however, have been ushered into the world with better patronage or more *éclat*, and have had such an interesting history as jequirity. With its South American reputation, the Brazilian bean found its way into DR. DE WECCKER's clinic, and from thence, with his indorsement and recommendation, it soon found a place in nearly every clinic throughout the civilized world. A host of experimenters set about to put it to the crucial test, and its virtues were tested in every case where the old remedies had apparently failed, or whenever the irresistible craze for something new tempted the ophthalmologist to experiment with this suddenly famous drug. Hardly had it reached this country when some ugly reports appeared in some of the oph-

thalmological journals, but such was the power of its reputation that trials were continued, and in spite of adverse criticism, its position seemed to be assured. Hardly a clinic could be visited, where some patients were not seen undergoing the torments of a course of jequirity treatment—and the little vial containing the infusion was exultantly pointed out as the cause of the torments and the great specific for trachomatous conjunctivitis and corneal pannus. There were a number of men, however, who watched this revolution in the treatment of pannus with some misgivings as to the ultimate result. They demanded of the remedy not only a greater assurance of success, but also a greater insurance against danger. They could not quite make up their minds to subject a patient to a course of treatment which, during a certain period of its development, placed the inflammation beyond their control. Still, brilliant results were frequently reported. Numerous eyes which had been entirely given up, were restored to usefulness—but it was remarkable how many eyes were given up, and how frequently the classical methods entirely failed. When notes were carefully compared it appeared that in the clinics where jequirity was not used trachomatous patients got along quite as well as in those where the infusion was freely applied; and there was a good deal less anxiety as to results. The outcome of these observations and comparisons, was that very many who were carefully watching the experiments, were led to rely on the less violent methods and to abstain from the use of jequirity.

Time, which brings about so many changes in methods and procedures, has not been idle in this instance. Jequirity is not much used now. The reason why its popularity has so remarkably waned, is not difficult to ascertain. It is necessary to state here that our remarks apply only to the infusion. With the powdered jequirity we have had no experience.

Glancing at the clinical history of the drug, it is evident that there are three great objections to the jequirity treatment. First, the painfulness and severity of the process. Second, the danger of corneal ulcerations. Thirdly, the unreliability of the ultimate result. It is unnecessary to discuss the first statement. Every one who has witnessed a patient with jequiritic ophthalmia, has witnessed a patient in severe pain. The danger to the cornea has been often much underestimated.

It is claimed that the intense inflammation can be controlled and in this manner any tendency to ulceration of the cornea can be checked. Experience teaches, however, that instances frequently occur where the inflammation can not be controlled, and where the result is disastrous. With such a possibility in view, it is difficult to gainsay the verdict dangerous. The statement regarding the unreliability of the ultimate result may be called in question, yet there is an abundance of testimony to its corroboration. Let it not be understood that we would have jequirity exterminated. It has its place, but only as a *dernier ressort*, to be employed when the less heroic methods have entirely failed. The classical methods have been by some much underestimated, and they ever will be if not used with proper discrimination. The promiscuous rubbing on of blue stone, and the persistent brushing the lids with nitrate of silver, without proper attention to the changes which are taking place, particularly in the cornea, must necessarily bring discredit on this method. A little more brains and a little less perfunctory routine work would add greatly to the credit of our clinics and materially decrease the percentage of failures. There is one other consideration which is worthy of mention in this connection on account of its practical bearing, although it has no scientific value. It should be borne in mind, when using a dangerous remedy, that the misfortunes of conscientious and competent physicians are only too liable to contribute to the fortunes of a certain class of lawyers.

The foregoing remarks may seem rather superfluous to the experienced ophthalmologist, but they are certainly opportune for the tyro in ophthalmology. Heroic measures have a potent charm, which often obscures the danger associated with their adoption. Therefore a repetition of the note of warning is not amiss.

EXPERIMENTAL RESEARCHES ON THE PATHOLOGY OF FEVER.

ROUSSY (*Arch. de Physiol.*, xxii, p. 354, 1890) has recently added some original experiments to our knowledge of the febrile process. He has observed several cases of high temperature of brief duration from the use of stale beer, decayed flesh, and drinking stagnant water containing vegetable matter, such as hay, leaves, etc. He refers

the cause of this fever to soluble chemical substances rather than to a specific microorganism. In experiments upon animals he found that intravenous injections of water containing decaying organic matter produced an intense fever after reaching 42° C., and marked gastro-intestinal disturbance, when a like quantity of the same substance introduced into the stomach did not cause fever or other disorders.

The writer especially calls attention to the high fever produced by beer yeast. When rubbed up with distilled water, and after 24 hours filtered, and a cubic centimetre of filtrate injected, hypodermatically, it is followed immediately by severe attacks of fever lasting from twelve to fifteen hours. That this fever is not due to the mechanical effects of the germs was proven by the fact that when a quantity of yeast cells were collected on a filter and dried at a temperature of 120° C., then mixed with distilled water and injected, the temperature rose but a fraction of a degree. That the fever was caused by the product of the living cell was demonstrated by cultivating beer yeast in bouillon, then carefully washing the cells at the bottom of the glass with sterilized water, and allowing them to stand for three days. The injection of this mixture produced the same stormy febrile attacks as that caused by the injection of stale beer.

He was able to separate the peculiar substances causing this fever, by the following method: a considerable quantity of yeast, 2-3 kg., was added to 1-2 liters of water and allowed to stand with occasional agitation for two or three days. After careful filtration, absolute alcohol was added until nothing more was thrown down. The precipitate was collected on a filter, washed, redissolved, and again precipitated. At last a white shining flaky precipitate was obtained, that under the microscope appeared to be made up of three or four substances. Through the different solubility of these substances in water, diluted and pure alcohol, it was possible for Roussy to separate them. Fever was only caused by one, a substance presenting fine granular masses of a light yellow color, which deliquesced, forming a syrupy mass that when dried adhered strongly to the vessel. In a desiccator the precipitate was pure white, resembling porcelain, slightly scaly and easily pulverized. It was readily soluble in

water, slightly in ether, and not at all in alcohol, benzine, chloroform or bisulphide of carbon. Upon the tongue it rapidly melted, at first having a resinous taste, then a biting feeling which rapidly rose to a sense of strangulation.

If one-half milligram of this substance, "Pyretogenin" as it is called by the writer, is injected for each kilogram of the animal's weight there is a rise of temperature beginning one-half to one hour after the injection, and frequently reaching as high as 42° C. It is accompanied by chills, vomiting, diarrhoea, etc. The pulse is small, hard and frequent, and the skin dry. After six or seven hours the animal is again in a normal condition. During the febrile movement there is an increase in urea, carbonic acid and the amount of heat eliminated.

THE EFFECTS OF COFFEE ADDICTION.

The excessive consumption of coffee by the working population, especially the females, of the district of which Essen is the centre is the subject of a paper by DR. F. MENDEL, in the *Berlin klinische Wochenschrift*, showing the principal disorders consequent upon the chronic abuse of that substance. He states that great numbers of the Essen people are in the habit of drinking coffee from morning till night, averaging daily a pound or more for each individual, of the Ceylon berry, which contains about four grams of caffeine to the pound. The author arranges the morbid phenomena observed by him in three groups, which are all remotely or directly referable to the ill effects upon the nervous system of the chronic abuse of caffeine. First, there are nervous troubles, beginning in a feeling of lassitude and indisposition to work, followed by depression of mind, cephalalgia and insomnia. These symptoms disappear more or less promptly when the individual has taken a concentrated infusion of coffee. Second, muscular disorders, as a greater or less diminution of vigorous motion, the impairment being no greater in the coarser domestic labors than in fine handwork, and tremors of the hands, even when at rest. Third, circulatory phenomena, as small, accelerated and irregular pulse, enfeebled apex-beat of heart, palpitation and some precordial distress; coldness of the extremities, appreciated even by the patient; anæmia of the mucous membranes and yellowish white complexion; cardial-

gia, eructations, sense of fullness of or pressure over the stomach. Anorexia is frequent, with nervous dyspepsia. A tendency to acne rosacea has been observed in a certain proportion of cases. The treatment consists in the gradual withdrawal of the coffee and the substitution therefor of milk, which helps to re-enforce the oftentimes scanty dietary; cognac in small doses at the outset of treatment; the patient to have daily cold baths with energetic friction; to spend as much time as possible in the open air. If the character of the daily labor is such as to produce nervous strain, this difficult work should be discontinued temporarily, at least.

EDITORIAL NOTES.

THE CONDEMNED AND THE FACULTY OF MEDICINE.—The last man condemned to death has declined to go to the dissecting room with his head cut off. What is droll in the whole proceeding is that the judges have hastened to comply with the wishes of an assassin, in which action they have been vigorously applauded by the political press. To our mind such a proceeding is scandalous, as paupers in our hospitals are entitled to the same consideration, and ought to have it accorded to them as readily as to a murderer. It is the least the latter can do to render some service to science, when during life they have caused so much trouble. Let the patients in our hospitals, those who can walk, get up and go to the Palais de Justice and there claim a burial of the first class; surely the judges would accord it to them sooner than to the Pranzini and Eyraud. In closing let us add that M. le Ministre has not understood the gravity of this request—it means, without doubt, the ruin of anatomical study, in encouraging such a ridiculous fear of the amphitheatre of l'École de Médecine.—*Le Progrès Médical*.

CHOLERA.—The epidemic is still prevalent in the interior provinces of Spain. It is reported that the full extent of its ravages is not made known to the public, the Government having surveillance of all telegrams which would be calculated to excite apprehension. So far as ill-founded and sensational reports are concerned we deem this action eminently judicious. The disease is reported as steadily advancing along the African coast of the Mediterranean Sea. The Russian

Government is advised of a severe outbreak in the seaports of the North Pacific Ocean, and all vessels coming from Asiatic Russian ports are subjected to the closest scrutiny. Sporadic cases are reported here and there in the United States, and sensational articles are sent broadcast by the press which at any other time would fail to command the least attention.

THE MEDICAL SOCIETY OF THE MISSOURI VALLEY held their third annual session at Council Bluffs, Iowa, September 17 and 18. There was a large attendance. The membership includes many able physicians and surgeons. The following officers were elected: President, Dr. J. M. Richmond, St. Joseph, Mo.; 1st Vice-President, Dr. B. F. Crummer, Omaha, Neb.; 2nd Vice-President, Dr. G. W. Coit, Missouri Valley, Ia.; Secretary, Dr. F. S. Thomas, Council Bluffs, Ia.; Treasurer, Dr. T. B. Lacy, Council Bluffs, Ia. The next meeting will be held at Kansas City, Mo., December 18 and 19.

GOLDEN BELT DISTRICT MEDICAL SOCIETY.—The Fall Meeting of this Society will be held in Abilene, Kan., on the 2nd prox. Dr. P. Daugherty, Junction City, Kan., President, and Dr. F. B. Browne, Salina, Kan., Secretary.

THE PASTEUR INSTITUTE IN CHICAGO.—This institute was opened on July 2. Twenty-four persons have thus far been under treatment. In twelve of the cases it was confidently believed that the dogs which inflicted the wounds were mad. In the other cases doubt is entertained upon that subject. The patients were treated by inoculation, and in every instance without any appreciable ill-effects.

REDUCED RATES.—The fare from Chicago to Louisville for those who propose to attend the annual meeting of the Mississippi Valley Medical Association, which convenes October 8, and the American Rhinological Society which meets in the same city two days earlier, has been placed at one and one-third rates for the round trip. There should be a full representation from the upper Mississippi Valley at these meetings. Abundant provision is made for a large attendance.

MEDICAL MISSIONARIES.—Among the missionaries who sailed from San Francisco September 4, per steamer Oceanic, we find the following: T. R. Jones, M.D.; Mrs. Stella B. Jones, M.D.;

Miss Rachel R. Benn, M.D.; Miss Ida Stevenson, M.D.; all for North China; J. H. M'Cartney, M. D., and wife, for West China; Miss Rosetta Sherwood, M.D., for Korea.

BERLIN MEDICAL CONGRESS.—It is gratifying to learn that the United States was so well represented at the International Congress. Excepting Germany it had the largest number of members, being represented by 659. Germany, excepting Berlin had 1,752, Berlin 1,166, Russia 429, Great Britain 358, Austro-Hungary 262, France 179, Italy 146, Denmark 139, Holland 112, Belgium 62, Switzerland 67, Spain 41, Sweden 108, Norway 57, Roumania 32, Luxembourg 2, Portugal 5, Turkey 12, Greece 5, Bulgaria 5, Servia 2, Monaco 1, Canada 24, Brazil 12, Chili 14, Mexico 7. Other parts of America 30, Egypt and Africa 14, China 2, Japan 22, India 2, Australia 7.

KLEBS-LÖFFLER BACILLUS.—Spronk, Wintgens and v. d. Brink claim to have demonstrated that the Klebs-Löffler bacillus is the essential etiological factor in diphtheria. From pure cultures they have obtained a substance that produces paralysis similar to the post-diphtheritic. —*Nederl. Tijdschr. v. Geensk.*

A RECENT FRENCH DECISION has reversed the old rule of French jurisprudence that a physician cannot recover for attendance upon the last sickness of an individual. Dr. Benoist, of Saint-Nazaire, recently carried a case of this kind, involving a charge of 236 francs, to a court of last resort and secured a favorable decision.

PROF. ERNST V. BRÜCKE held his last lecture on July 17. The occasion was properly observed by students and colleagues of the eminent physiologist. He is retired from his professorship in consequence of the Austrian law that does not permit a teacher to remain in his position after having reached the age of 70. He had been professor of physiology in Vienna for forty-one years.

THE RIBIERI PRIZE.—The Turin Academy of Medicine announces the subject selected for the competition for the International Ribieri Prize as being "Researches on the Nature and Prophylaxis of the Infectious Diseases of Man." The value of the prize is \$3,600. The competing papers should be written in either the Latin, Italian or French languages.

TOPICS OF THE WEEK.

PROTECTIVE INOCULATION AGAINST TUBERCULOSIS.

Probably the most noteworthy discovery reported at the recent session of the International Medical Congress was Prof. Koch's announcement of a substance that has the power of preventing the growth of the tubercle bacilli, not only in the test-tube, but in the animal organism as well. Guinea-pigs, that are extraordinarily susceptible to tuberculosis, inoculated with this substance, acquire immunity to inoculations of the tubercle bacilli; and in animals affected with general tuberculosis, inoculation with the substance will stop the morbid process without any injury to the organism. The experiments are yet incomplete, and their author very conservatively refrains from drawing any other conclusion than that of the possibility of making the body resistant to the action of pathogenic bacteria.

In this, as in other discoveries that have marked new eras in the progress of science, independent observers have touched the threshold at the same time. Koch's omission to state the character of his substance only allows us to surmise that it is similar in character to that discovered by two French observers, who established the date of their discovery in somewhat the same fashion in vogue among the philosophers of the sixteenth and seventeenth centuries. According to *Le Mercredi Médical* of August 27, Dr. Grancher and Dr. H. Martin deposited a sealed envelope with the Paris Academy of Medicine in November, 1889, containing a description of a method of treatment by which they had arrested for a long time the evolution of experimental tuberculosis in rabbits. The publicity that Prof. Koch gave to the results he had obtained in making guinea-pigs refractory to tuberculosis, or in curing incipient tuberculosis, induced Grancher and Martin to publish their researches on the same subject earlier than they had intended. In all their experiments they had used the rabbit, making the inoculations by intravenous injections, obtaining thus a tuberculosis that was fatal in a short time, that made local treatment impracticable, and that gave rise to definite lesions in the liver, spleen, and lungs. As the tuberculosis thus created was always fatal, there was a solid foundation that permitted of an exact appreciation of the positive or negative results of a method that was intended to confer a refractory condition or to cure after infection.

Inoculations were made, at the same time, in protected rabbits and in test rabbits in a vein of the ear, of the same quantity of a virulent culture of the *Bacillus tuberculosis* diluted with a small quantity of sterilized water. In a series inoculated on December 31, 1889, the test rabbit died on the twenty-third day, while the protected rabbits lived from a hundred and twenty-six to two hundred and twenty-nine days after the inoculation. The necropsies were negative; the spleen was small; and the liver was free from bacilli, though in the circumlobular spaces there were some embryonic cells, constituting a trace of a tuberculous process on the way to recovery.

They attempted to find a graduated virulence as well as a loss of that virulence, and, while not mathematical,

the results were sufficiently constant to be employed after the same fashion that Pasteur used desiccated spinal cords for treating rabies. The most virulent culture is designated as number one, killing a rabbit in five days or less; the cultures numbered two and three are fatal after a variable time, according to the resistance of the animal. Cultures four, five and six are less fatal, while cultures seven, eight, nine, and ten decrease in strength and do not affect rabbits.

A rabbit is inoculated in a vein of the ear with half a Pravaz's syringeful of a culture diminished in virulence to number six. In a week culture number three is injected, and this is repeated in nine days; two weeks later culture number two is injected, then, nineteen days later, culture number one. After inoculation with number one the animals usually die, though not so quickly nor with such severe lesions as the test rabbits inoculated at the same time. If the inoculations stop at number two, the rabbits live for months thereafter.

Very justly, these experimenters believe that they have succeeded in giving to rabbits a prolonged resistance against sure and rapid experimental tuberculosis, and also in conferring immunity against that disease, the duration of which remains to be determined. The probable benefit of these discoveries to humanity is so patent that comment is supererogatory.—Editorial, *N. Y. Med. Journal*.

SANITATION IN RELATION TO BUSINESS.

In every community there is, aside from all others, a business interest. Where there is no business, no commercial activity, and no effort to produce something, there can be no prosperity and no happiness. People must live, and in order to do so, must have that on which to subsist. To enjoy more than a simple existence, more must be had to enjoy. None of these things produce themselves, but must be secured by some endeavor. This endeavor will be commensurate with the ability to do and the doing.

A community is the aggregate of individual units—a multiplication of the individual. The aggregate of business prosperity is the sum of individual industry and productiveness. A community can be no more than its individual members. Its character and collective energy is the whole of its individual parts. A race is savage because its members are. An army is strong because its individual soldier is. A ship is durable because of the durability of its component parts. The character of everything depends on that of the parts of which it is composed. So, the business prosperity of a community depends on that of the individuals composing it. But on what does the prosperity of the individual depend? Everything else being equal it depends on his physical ability to render some service, his ability to do something, his health. Consider the individual case. Other things equal, his prosperity depends on his physical capacity for work. Render him physically incapacitated and his personal means for gaining a livelihood cease. Make him strong and healthful, and he has the elements to attain prosperity. What is true of the individual is true of a

collection of individuals, and, hence, the prosperity of a community depends on its healthfulness.

Health has a money value outside of every other consideration, and those interested in the industrial and business progress of a community cannot ignore the important element of health and attain the highest prosperity. 'Notwithstanding this fact we must confess to a lack of interest in the preservation and promotion of health on the part of that portion of a community generally designated as "our leading business men." These "leading business men" seem not to recognize the importance of health as an element of great value in the business progress of a community. They give that over to municipal machinery, which too often is run by political motors in the interest of party ascendancy. It would seem unreasonable that business men, interested in the means of developing industrial progress, would neglect so important a factor as health, but they do. It probably results from a lack of proper realization of the value of this element, or an ability to see wealth, or the means of producing it, as only tangible objects. To such an extent is this true that we often see our business men opposing schemes for the promotion of the general health on account of their cost, and too often prove themselves unfriendly to health boards, building inspectors, inspectors of plumbing, smoke inspectors and the like offices maintained for the promotion of health. Of so much importance is the factor of health in the general progress of industrial and business interests, that the most cordial co-operation should enlist itself in support of health ordinances and agencies designed for its promotion. This liberal spirit should be so thoroughly and actively operative as to set the bounds of political influence and interference to the extent of establishing independent and unhampered administration of health laws.

The progress of a community depends on the individual units of progressive force. These units in this instance are human beings who can be weakened by insalutary surroundings, or strengthened by proper sanitary conditions. It is the office of sanitary science to preserve and promote health. It has its agencies through which it operates to this end. It asks at the hands of the State and city, laws and ordinances by which officers may be selected to enforce the observance of hygienic laws. The efficacy of these depends largely on public support and the co-operation of all citizens. The business interests of every community should enlist itself in this cause, and lend its support as a profitable investment. Sickness is not only a cost to be borne, but, by lessening the power of production, it retards business progress. As a business proposition the healthfulness of a community is worthy of the deepest consideration.—*Sanitary News*.

EPIDEMIC VISITATION.

Epidemics do not prevail at all times; therefore special predisposing circumstance or influence must be present and lend its aid to produce widespread visitation. The contagion of measles, scarlet fever, diphtheria, whooping-cough, or small-pox, like that of enteric or typhoid fever, is probably never wholly extinct in any country where these diseases have once prevailed; yet their epi-

demic prevalence only occurs in uncertain cycles or during particular seasons. To determine why epidemics rise and spread in some years so much more generally or widely than in others, is one of the most interesting points in medical physics; but, unfortunately, no satisfactory answer has yet been given to this curious and most interesting question, and, while the phenomenon can not be explained, we must be content in our ignorance to refer it to the influence of what is called by Sydenham and the older physicians, "The medical constitution of the air." Precisely the same uncertainty occurs with the crops; this year luxuriant growth and an abundant harvest; next year a general or partial failure; but the seed, under all modifying or controlling influences of growth and multiplication, remains the same in quality. In other words, the crops may vary as to the quantity or abundance of the harvest, but the specific quality is unchanged under all conditions.

Again, some soils are absolutely sterile for the growth of certain grains. For example, Indian corn does not grow to perfection in Ireland, while wheat, rye, oats and barley in that country come to maturity and yield the husbandman a successful harvest; and the same is true of certain localities concerning the prevalence of enteric or typhoid fever, also diphtheria and scarlet fever.—Dr. James E. Reeves, *Tenn. Health Bulletin*.

THE NATURE OF THE MICROBE.

For a long time there was a dispute as to whether disease germs were animal or vegetable, and the word microbe was adopted as a neutral term. Finally Pasteur compounded a fluid entirely of minerals, furnishing only carbon, hydrogen, oxygen and nitrogen, in form easily obtainable, and it was found that the microbes could subsist on this. As it was found that these disease germs would subsist on either animal, vegetable or mineral matter, wherever they could easily obtain carbon, hydrogen, oxygen and nitrogen, all bacteriologists now class them as vegetable organisms.

CARRIAGE OF INFECTIONS BY PHYSICIANS.

The communication of contagious diseases by physicians is a question which has for some time been agitated in England, the general conclusion being that, although it cannot be denied as a thing possible for a medical man under some circumstances to convey infection from one patient to another, the risk of this taking place is, if ordinary precautions be taken, almost nil. This is thought to be clearly shown by the experience of the London Fever Hospital, where the resident medical officer in the discharge of his duties is constantly passing from the scarlatina department to the departments for measles, typhoid, diphtheria, etc., and yet, as stated, it has never been found that he transfers these contagia, although he would be much more likely to do so than an ordinary practitioner, inasmuch as the poison is necessarily more concentrated in a fever ward than in a room where only one patient is treated; the medical attendant is not, as a rule, brought into sufficiently close and prolonged connection with his patient for his clothes to receive any very large amount of the contagion, and a short exposure in the open air is generally sufficient to disinfect him. For all ordinary purposes, washing the hands in a disinfecting solution and a short exposure to fresh air will sufficiently disinfect a practitioner, though it is advisable that he change his coat and visit his infectious patient last. *N. Y. Tribune*, September 13, 1890.

PRACTICAL NOTES.

ASEPSIS IN VACCINATION.

Dr. Alfred Leach reports, in the *British Medical Journal*, a six years' experience in the antiseptic management of vaccination, of which the following are the principal precautions:

1. The lymph is collected on the day it is used.
2. The instruments, the patient's arm, and the lymph tube, before being opened, are washed in a disinfecting solution.
3. In four places small scarifications and valvular punctures are made with a Graefe's cataract knife that is charged with lymph.
4. When the wounds are perfectly dry they are dusted with bismuth, and a pad of dry lint is applied.
5. After the second day the parts are daily washed with a gentle current of cold water. No sponge is allowed to come in contact with the arm.

Results: He has had only one case of inflamed arm during the six years he has employed this plan of management.

STROPHANIN.

Strophanthus now holds a recognized and valuable place amongst the remedies used in the treatment of cardiac complaints, being perhaps only secondary to digitalis. An interesting article was read at the Medical Congress held in Vienna in April last, by Rothziegel, on the active principle of strophanthus—namely, strophanin. An abstract of the paper is published in the *Centralbl. für Klinische Medicin*, 1890, No. 27. The doses given were 0.0002 to 0.0003 gram, amounting to $1\frac{1}{2}$ to 5 milligrams per diem. In English measure this would amount to about $\frac{1}{160}$ to $\frac{1}{320}$ of a grain for a dose. It is best given in capsules, and repeated every two hours. Rothziegel sums up his results thus: 1. The circulation was in most cases greatly improved, the pulse became stronger and more regular, a difference being sometimes noticed in from five to ten minutes after the first administration of the drug, but the full effect upon the pulse was not attained until the second or third day of its use. The improvement occurred later than with digitalis, but if the strophanin were continued, its beneficial effects were more lasting, and persisted for some time after the drug had been discontinued. 2. The dyspnoea, palpitation, and other symptoms occurring in organic disease of the heart were much relieved whilst the patient was taking this drug. As a rule, the dyspnoea disappeared before the palpitation. In cases of so-called "nervous palpitation" strophanin produced some relief, but this was only temporary. 3. The amount of urine secreted was increased, but not until the stro-

phanin had been taken for some considerable period, and, moreover, the quantity passed was not so large as when digitalis or the tincture of strophanthus had been given. The increase in quantity of urine lasted several days after the strophanin had been discontinued, and was apparently due to increased blood-pressure/ and not to any direct action on the kidney. No sign of kidney irritation was noticed at any time. 4. Gastric disturbances, even after prolonged use of the drug, were very rare, and even when such phenomena did appear strophanin could be taken in capsules without any discomfort. As a general rule the appetite was increased. The condition of the stools was not altered. There was no diaphoretic action. 5. The nervous system was only influenced indirectly, and that favorably, owing to the improved strength and regularity of the heart's action. 6. An accumulative action was not noticed in the case of strophanin, and the drug may be continued for weeks without any ill effects. 7. Subcutaneous injections ($\frac{1}{160}$ th grain in watery solution), in cases where the heart's action was very weak, produced a rapid and lasting effect on the pulse, and no unpleasant local effects were caused by the puncture. 8. With the tincture of strophanthus, strophanin compared unfavorably. The tincture acted more certainly, quickly, and energetically than the alkaloid; this was especially noticed in its diuretic action. Cases, however, occasionally occurred in which not only the tincture of strophanthus and digitalis, but also the other cardiac tonics, could not be taken, but in which strophanin was well borne, and the latter was found to be a good substitute for the tincture in such cases. Other instances were also noted in which all the cardiac tonics were ineffectual, whilst the administration of strophanin was followed by satisfactory results. 9. The indications for the use of strophanin in valvular disease, with or without affection of the myocardium, are the same as in the use of digitalis—that is to say, when there are indications of heart failure. In acute and chronic Bright's disease strophanin produces diuresis, especially if the heart's action is at all weak.—*Lancet*.

BOROGLYCERINE CREAM.

Dietrich (*Pharm. Centralhalle*) proposes a cream of boroglycerine as follows: Boric acid, 1 part; glycerine, 24 parts; dissolve by the aid of heat; anhydrous lanoline, 5 parts, paraffine ointment, 70 parts, to be melted together. These, when cooled, are to be thoroughly stirred together to a creamy consistence. Coloring matter and perfume may be added, if desired. As a cosmetic application to the face and hands this compound has certain advantages over the ordinary creams or balms.

SOCIETY PROCEEDINGS.

American Orthopædic Association.

*Fourth Annual Meeting, held in Philadelphia,
September 15, 16 and 17, 1890.*

FIRST DAY—MORNING SESSION.

The Association met in the College of Physicians, and was called to order by the President, Dr. De Forest Willard, of Philadelphia, at 10 A.M.

After a short business meeting, the President delivered the

ANNUAL ADDRESS.

In a few well chosen words he welcomed the members of the Association and extended to them the hospitalities of the city—a city which for more than a hundred years has been regarded as the centre of medical education, and as the home of surgeons who have given careful and thorough attention to their professional work.

Dr. Willard found orthopædic surgery in Europe in a far less advanced state than he had anticipated. Orthopædic surgery in America stands far ahead in its surgical aspect, and in the ingenuity of its mechanical contrivances, than in Europe. Such men, however, as MacEwan, Edmund Owen, and Howard Marsh are doing excellent orthopædic work.

Dr. E. H. BRADFORD, of Boston, read a paper entitled

TREATMENT OF DEFORMITIES OF SPASTIC PARALYSIS,

in which he said orthopædic surgeons had not done full justice to the surgical treatment of this affection, although it is one which occasions distortion and difficulty in locomotion, which is because the disease has been but little understood. Light has been thrown upon the subject quite recently by neurologists, and it is now recognized and its clinical history understood. The author has not been able to gain permanently satisfactory results by the use of appliances—although in infantile paralysis—sometimes confounded with spastic or cerebral paralysis—appliances are of great assistance. He has not derived any benefit from the use of electricity, and but very little from massage. In affections of the lower extremities from this disorder, he has had satisfactory results from tenotomy and myotomy of the resistant muscles—*i. e.*, tendo Achilles, hamstring muscles, and the adductor muscles. After operation a light appliance should be worn to aid locomotion for a month or so. Permanent benefit may be expected in children free from mental deficiency. His experience was based upon fourteen cases, with ages ranging from 4 to 16. He had had no experience in operating upon adults with this affection.

Dr. ARTHUR J. GILLETTE, of St. Paul, contributed a paper and reported a case of

TENOTOMY FOR RELIEF OF DEFORMITY IN SPASTIC PARALYSIS.

The patient was 11½ years of age. The deformity was the right forearm flexed upon the arm. Whenever excited the muscles of the arm became rigid, as did the fingers of the hand of the same arm. The right foot was in the position of talipes equinus, and when the patient attempted to walk and weight was thrown on the foot, it was brought into the position of talipes equino varus.

Dr. Gillette divided the tendo Achilles, which permitted the foot to come into good position. It also relieved the flexion at the knee which was present. He then placed the foot in plaster of Paris and allowed it to remain there for a few weeks, the child playing and walking as much as she desired. When he removed the plaster he applied an ordinary ankle brace with a "stop joint" to prevent the foot from returning to its former position. It is now eight months since the operation, and the child has not had the slightest spasm of the muscles of the foot. The ankle-joint will permit of almost the normal movements, and she walks with but a slight limp.

Dr. AP MORGAN VANCE, of Louisville, read a paper entitled

AMPUTATION AS AN ORTHOPÆDIC MEASURE,

in which he stated that the introduction of amputation as an orthopædic measure was something out of the recognized lines, but as orthopædists are expected to relieve patients of crippling and deformity, it is obvious that if amputation in some cases is the best and often the only way this can be done, the operation may become orthopædic. In the past ten years quite a number of cases had come under his care where there was no doubt in his mind that amputation, performed for convenience sake, would have been better than any other treatment. Among those where the knee can be saved will be found a few cases of old infantile paralysis (talipes), and adult cases of congenital talipes, where painful bursæ have developed and life is often unendurable from the pain caused by walking. On the other hand, old subluxated knees with ankylosed patellæ, with flail joints and great shortening, are not uncommon. Several of these cases can be converted from hopeless cripples into useful members of society by a proper amputation and adjustment of a good limb.

Dr. Vance reported four cases illustrative of the good done by amputation performed orthopædically.

FIRST DAY—AFTERNOON SESSION.

Dr. HENRY LING TAYLOR, of New York, read a paper entitled

A READY METHOD OF COUNTER TRACTION AT THE KNEE,

in which he said experience had shown the obstinate and serious nature of many cases of synovitis and arthritis of the knee, and the frequency of grave sequelæ, unless treated with the utmost care and precision. Properly applied counter-extension with fixation and recumbency usually afford prompt and often marvelous relief to the intense suffering in the active stage of the trouble, and at the same time provides conditions favorable to the proper nutrition of the joint, and the subsidence of the inflammatory process. Fixation alone, or simple traction by means of the weight and pulley, however useful in an emergency, give by no means the same results. Dr. Taylor is convinced that the early application of some form of counter-extension is of extreme importance in surgical inflammations of the knee-joint.

DR. F. H. MILLIGAN, of Philadelphia, contributed a paper on the

TREATMENT OF INFANTILE CLUB-FOOT PRELIMINARY TO OPERATION.

He offered some suggestions regarding the treatment to be used in cases of club-foot before proceeding with the operations of tenotomy and osteotomy. Not infrequently we hear of tenotomy, and even of osteotomy, as having been performed on the feet of infants not more than two or three months old. This he considers premature practice.

In private practice and among people possessed of a fair amount of intelligence, the traction principle is by far the preferable method of treating infantile club-foot; but in dispensary practice we meet with a different class. The directions are not faithfully attended to, and the cases show little improvement. For this reason the fixed dressing is preferable for the class of cases that apply for treatment at the dispensary clinic. But neither the fixed dressing nor any other can be depended upon to correct a case of severe club-foot or effect a permanent cure without a final resort to the use of the knife.

DR. BENJAMIN LEE, of Philadelphia, in a paper on

SACRO-ILIAC DISEASE,

reported two cases of this affection, and from them deduced the following corollaries:

1. Disease of the sacro-iliac symphysis induces a characteristic deformity of the spine, of which the features are a lateral displacement of the entire trunk in a direction away from the affected side, comprising the entire length of the spine, and the almost complete absence of rotation.

2. It also induces a peculiar rolling or waddling gait.

3. It is often the cause of inveterate and excruciating sciatica.

It is useless to attempt to remedy the spinal distortion as long as its cause remains unrelieved.

5. The existence of chronic pain in the sciatic nerve not yielding in a reasonable space of time to medication, should always lead the practitioner to make a careful examination of the spine and of the region of the ilio-sacral juncture.

6. This affection is met with more frequently in adult than in child life.

7. Its appropriate treatment consists in splinting the pelvis and thus preventing motion between the opposing surfaces of the symphysis, motion not being its natural function.

8. For the same reason extension can not be expected to produce favorable results in this affection that we obtain from it in arthroidal joints.

9. The disease is often of extremely slow development.

10. Its first symptom is often abdominal pain, whence it may readily be mistaken for peritonitis, ovaritis, cystitis, and the like.

11. This pain is principally referred to the side on which the lesion exists.

12. The existence of severe unilateral abdominal pain, accompanied by little or no febrile action, should lead to the suspicion of the existence of this affection.

13. A mechanic may, by a happy chance, give temporary relief to a patient suffering from this disease, but as he is entirely ignorant of its seat and nature, he is perhaps not the safest person to refer the patient to.

DR. ROYAL WHITMAN, of New York, read a paper on

PERSISTENT ABDUCTION OF THE FOOT

in which he said the successful treatment of any chronic affection demands a personal, persistent attention to details on the part of the surgeon.

The two principal objects of treatment are (1) to overcome the contraction and spasm of the abductors; (2) to strengthen the abductors. This is best accomplished as follows:

The patient being etherized, the affected foot is forcibly extended and adducted—that is, the heel and toe are both turned inward so that the inner border of the foot is bent like a bow, it is then forced inwards under the leg to a position of extreme equino-varus, the operation being attended with audible cracking of adhesions in all the diseased articulations. In this position a well-fitting plaster bandage is applied with the object of persistently overstretching the shortened ligaments and contracted muscles and holding the foot firmly in its new position. The bandage may remain on a variable length of time according to the subsequent pain and the difficulty that has been experienced in the reposition. From one to three weeks is the average time, when it is removed.

SECOND DAY—MORNING AND AFTERNOON SESSIONS.

The two sessions of this day were devoted to the subject of *Rotary Lateral Curvature of the Spine*. The following papers were read, after which there was a general discussion of the subject by the members of the Association:

The Nervous and Muscular Elements in the Causation of Idiopathic Curvature, by Dr. Benjamin Lee, of Philadelphia; *The Muscular Element in the Etiology*, by Dr. Chas. M. Scudder, of Boston; *Etiology*, by Dr. R. W. Lovett, of Boston; *Mechanism of Rotation*, by Dr. A. B. Judson, of New York; *Treatment*, by Drs. E. H. Bradford, of Boston, and Henry Ling Taylor, of New York.

THIRD DAY—MORNING SESSION.

DR. JOHN RIDLON, of New York, read a paper entitled

A REPORT OF SIXTY-TWO CASES OF HIP DISEASE OBSERVED IN THE PRACTICE OF HUGH OWEN THOMAS.

He presented for consideration further facts regarding the use of the Thomas hip splint. Nothing appears to indicate that the principles upon which Mr. Thomas has based his teachings are in any way at fault; though in practice there is still something to be desired.

The average duration of limp before treatment was commenced in 62 cases was a little over ten months. The average duration of treatment was not computed, as only a few cases were cured and as many had been under treatment but a short time. Of 58 cases that had been under treatment for a longer or shorter time, 24 had shortening; 24 had adduction, 5 had abduction, 3 inward rotation, and 2 had outward rotation. In the cases where abduction coexisted with the shortening, the abduction was an advantage as it compensated in a measure for the shortening.

DR. JAMES K. YOUNG, of Philadelphia (by invitation), contributed a paper on

DISEASES OF THE EYE ASSOCIATED WITH SPINAL CARIES,

in which he said the diseases of the eye associated with caries of the spine are from necessity of the same pathological nature—strumous or tubercular. The occurrence of ophthalmic affections in certain cases of spinal caries has frequently been observed, and the direct association has been frequently noted.

Diseases of the eye associated with caries of the vertebræ are scrofulous or tubercular, the difference being principally in degree.

Scrofulosis may be considered the constitutional predisposition to caseation; tuberculosis the same condition infected with bacilli of tuberculosis.

Both the lesions of the eye and the caries of the vertebræ yield readily to a constitutional and local treatment.

DR. SAMUEL KETCH, of New York, in a paper entitled

POSTERIOR RACHITIC CURVATURE OF THE SPINE, said, that of the deformities of the spine whose underlying cause is found in the condition known as rachitis, the ones most commonly seen in practice are the *lateral* and *posterior*.

The etiology and pathology of posterior rachitic curvature of the spine are essentially those of rickets in general, the deformity being simply one of the local manifestations of a general diathesis. Dr. Ketch believes the causation is largely mechanical, and furthered by such movements as tend to throw the weight of the body on the weakened vertebræ and their appendages. A large number of cases show a limitation of the curve to the dorso-lumbar spine, a very favorite position for the occurrence of Pott's disease.

In the treatment of young children, from one to two years old, he never advises the use of mechanical supports, the tissues being so unstable that any pressure is apt to be badly tolerated. In this class the constant recumbent position, with fresh air and sun-baths together with internal treatment and close attention to the diet are usually sufficient.

THIRD DAY—AFTERNOON SESSION.

At this session the following papers were read: *Lateral Deviation of the Spinal Column in Pott's Disease*, by Dr. R. W. Lovett, of Boston; *Relief of Paraplegia*, by Dr. A. J. Steele, of St. Louis; *Prognosis of Pressure Paralysis*, by Dr. T. Halsted Myers, of New York.

OFFICERS FOR 1891.

President—Dr. A. B. Judson, New York.

First Vice-President—Dr. Ap. Morgan Vance, Louisville, Ky.

Second Vice-President—Dr. George W. Ryan, Cincinnati, Ohio.

Secretary—Dr. John Ridlon, New York.

Next place of meeting, Washington, D. C., in connection with the Congress of American Physicians and Surgeons.

LOCAL ANÆSTHESIA BY MEANS OF CARBONIC ACID.—According to Voituriez, the anæsthetic effects of carbonic acid, described by Brown-Séquard, can be obtained in an extremely simple manner by means of the ordinary siphons containing mineral water charged with the gas. The anæsthesia is obtained by projecting at a distance the contents of two or three siphons of seltzer water, limiting the application to the part to be operated upon. The insensibility to pain lasts about five minutes and then slowly disappears. The method is chiefly applicable to the limbs, as about the head and trunk the irrigation is somewhat inconvenient.—*London Medical Recorder*.

ASSOCIATION NEWS.

American Medical Association.—Report of the Librarian.

Mr. President:—I have the honor to present herewith the Catalogue of Additions made to the Library of the Association from June 15, 1889, to May 15, 1890. During this period 123 distinct titles have been added, exclusive of Transactions of Societies, Reports of Boards of Health, Periodicals, etc., not previously received and catalogued.

The number of volumes added during the past year is 241, and the Library consists at present of about 8,000 volumes, representing 3,100 titles.

It is respectfully suggested, that the subscription to the *Index Medicus* for 1890 be continued, and the sum of \$10 be appropriated to that end. Respectfully submitted,

C. H. A. KLEINSCHMIDT, M.D., Librarian.

3045 N. S., Washington, D. C., May 15, 1890.

CATALOGUE OF ADDITIONS TO THE LIBRARY OF THE AMERICAN MEDICAL ASSOCIATION, BY DONATIONS, EXCHANGES AND SUBSCRIPTIONS, FROM JUNE 15, 1889, TO MAY 15, 1890.

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Bruhn, Chr., Ein Fall von Verletzung des Sehnerven.

Buck, R., Ein interessanter Fall von Schnürrückwirkungen an den Baucheingeweiden.

Burmeister, J., Einige Fälle von Miliartuberkulose, ausgehend von Carriösen Processen.

Carstens, C., Beitrag zur Lehre und Statistik der Oesophagusgeschwüre.

Dippe, O., Gefolgschaft und Huldigung im Reiche der Merowinger.

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Doehle, Dr., Beobachtungen über einen Antagonisten des Milzbrandes.

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Engel, H., Ein Fall von Myxoma lipomatodes der Unterleibshöhle.

Fischer, C., Einige Fälle von heteroplastischen Osteomen.

Fischer, W., Ueber die feineren Veränderungen bei der Bronchitis und Bronchietasie.

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Hinrichsen, W., Ueber M-Xylobenzylamin.

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Hülsmann, A., Drei Fälle von chronischen Hydrocephalus.

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Kersten, F., De Ellipseos usu luciano.

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Kuhl, J., Ueber tuberculöse Magen-Geschwüre.

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- Mildenstein, P., Ein Fall von Contractur der Vorderarm-Flexoren nach Humerus-Fraktur.
- Müller, A., Brillengläser und Hornhautlinsen.
- Multhaup, K. B., Beitrag zur Lehre von der Aktinomykose.
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- Nierhoff, B., Drei Fälle von Kaiserschnitt.
- Osten, G., v. d., Die Handels und Verkehrssperre des deutschen Kaufmannes gegen Flandern.
- Otto, F., Ueber bandförmige Hornhauttrübungen.
- Petersen, J., Beitrag zur Kenntniss der Enchondrome.
- Plath, G., Ueber—Aethyl—Stilbazol.
- Pöhlmann, H., Ueber die Principien bei Schieloperationen.
- Reuter, A., Ueber die Wirkung des Extract Hyoscyami bei Enteralgie.
- Ritzenfeldt, E., Der Gebrauch des Pronomens, Artikels u. Verbs bei Thomas Kyd.
- Röpcke, A., Beitrag zur Aetiologie der Oesofa guscarinome.
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- Thilo, F., Zur Therapie des Myeloidsarcoms.
- Unzer, A., Die Convention von Klein-Schnellendorf.
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- Wicht, L., Zur Aetiologie und Statistik der amyloide Degeneration.
- Wieding, G., De aetate consolationis ad Liviam.
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NECROLOGY.

Silas H. Douglas, M.D.

At a meeting of the Department of Medicine and Surgery of the University of Michigan, held on the 4th of September, 1890, the following minute was adopted, with direction that it be entered in the records of the faculty.

Silas Hamilton Douglas, one of the founders of this department of the university, and for twenty-eight years a member of this faculty, died in Ann Arbor, August 26, 1890, at the age of 74 years. He was one of a very few strong men of steady purpose, who opened a way for medical education in this State, and from the first determined that broader foundations should be laid for the support of medical learning. Elected as professor of chemistry in this university on August 5, 1846, he was soon active in those movements which obtained the adoption, by the Board of Regents, of a plan for the organization of a department of medicine, presented by Dr. Zina Pitcher and others, January 17, 1848. His interest in medicine was direct and personal; he had entered upon practice as a physician before he became a college teacher, and in the beginning of the medical school he held for a time the chair of materia medica in addition to that of chemistry. Dr. Douglas was one of the original members of this body who have served, each in turn, for a considerable period, as the dean of the faculty. Of these but one remains with us, now our honored presiding officer, a witness of the growth of medical education, rising evenly and surely upon the foundations laid by these fathers.

Early in the building of the foundations Prof. Douglas set out to provide for the laboratory method of study, then nearly unknown in medical schools, yet a method which has become characteristic of the finest training of the time. When Dr. Douglas had labored in the university for ten years, on May 8, 1856, the Board of Regents made provision for the erection of a building under his charge to serve as a chemical laboratory. Of this it is stated in President Tappan's annual report of the following year, that it was "one of the most complete and efficient in our country." To this and its development Prof. Douglas gave the best years of his life. It was due to the indomitable courage and unyielding perseverance strongly knit in his sturdy nature, that laboratories of science gained an early and vigorous growth in this institution. And it was through his interest in medical education that medical students received the best of laboratory opportunities. A staunch defender of the interests of the department of medicine and surgery, he was confident of its future strength and service. To him and his early associates in medical education a great debt of gratitude is due. We remember his services with thanksgiving, and write his name with honor.

To his family and his relatives we desire to extend our sympathies, and we invoke for them the consolations of the religious faith which he sustained.

CORYDON L. FORD, M.D., Dean.

University of Michigan, Department of Medicine and Surgery, September 4, 1890.

MISCELLANY.

LETTERS RECEIVED.

B. Westermann & Co., Dr. J. B. Ingals, New York City; Rev. John F. Stanton, New Albany, Ind.; Dr. B. M. J. Conlin, Alexandria, S. Dak.; Dr. R. S. Brice, Keota, Ia.; Sultan Drug Co., St. Louis, Mo.; Dr. Henry B. Baker, Lansing, Mich.; Dr. J. B. Mattison, Brooklyn, N. Y.; James Black, Denver, Col.; Dr. E. J. Mellish, Ishpeming, Mich.; Dr. W. C. Townes, Chattanooga, Tenn.; Sydney Haywood, Dr. Addison H. Foster, Chicago; Dr. L. R. Culbertson, Zanesville, O.; Dr. M. H. Tanner, Bolton, Miss.; Henry B. Gilpin, Baltimore, Md.; Dr. C. H. A. Kleinschmidt, Dr. Irving C. Rosse, Washington, D. C.; Dr. James Hanks, Brashear, Mo.; Dr. J. Henry C. Simes, Dr. Wm. Whitford, Philadelphia; Frederick Stearns & Co., Detroit, Mich.; Dr. Edw. Pennock, Waynesville, N. C.; The Medical Abstract, J. Walter Thompson, New York City; Clark, Forbes & Co., Miamisburg, O.; Dr. J. C. Hoag, Chicago; Louis Klopsch, Medical Purveying Depot U. S. Army, Jas. F. Madden, New York City; Med. Dept. University of Georgetown, Washington, D. C.; Dr. John McCurdy, Youngstown, O.; Dr. G. Betton Massey, Univ. of Pennsylvania Press, Philadelphia; Rush Medical College, Chicago; Katharmon Chemical Co., St. Louis, Mo.; Roberts & Allison, Indianapolis, Ind.; Farmers' Bank of S. Dakota, Lake Preston, S. Dak.; Dr. J. H. Van Eman, Kansas City, Mo.; Dr. Geo. A. Brown, Barre, Mass.; Dr. J. R. Breakey, Alma Centre, Wis.; Dr. Walter Channing, Brooklyne, Mass.; Dr. J. B. Payne, Hot Springs, Ark.; The Bancroft Co., San Francisco, Cal.; Dr. C. R. Earley, Ridgway,

Pa.; I. Phillips, Atlanta, Ga.; Parke, Davis & Co., Detroit, Mich.; Dr. C. L. Topliff, New York City; H. Price, Germantown, Pa.; Dr. T. L. Bennett, Kansas City, Mo.; Cardogan & Hatcher, Quincy, Ill.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 13, 1890, to September 19, 1890.

By direction of the Acting Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered:

Major Charles L. Heizmann, Surgeon, is relieved from duty at San Antonio, Tex., and will report in person to the commanding officer at Ft. Clark, Tex., for duty at that station, to relieve Capt. Edward B. Moseley, Asst. Surgeon, who, upon being relieved by Major Heizmann, will report in person to the commanding officer at San Antonio, Tex., for duty. Par. 23, S. O. 211, A. G. O., Washington, September 9, 1890.

By direction of the Acting Secretary of War, Major Joseph K. Corson, Surgeon, is relieved from duty at Ft. Sherman, Idaho, and will report in person to the commanding officer, Washington Bks., D. C., for duty at that station. Par. 4, S. O. 412, A. G. O., September 10, 1890.

By direction of the Acting Secretary of War, a board of medical officers, to consist of Col. Edward P. Vollum, Surgeon; Major George M. Sternberg, Surgeon; Major Albert Hartsuff, Surgeon; Capt. William E. Hopkins, Asst. Surgeon, is constituted, to meet in New York City on October 15, 1890, or as soon thereafter as practicable, for the examination of candidates for admission into the Medical Corps of the Army. Par. 8, S. O. 213, A. G. O., Washington, September 11, 1890.

Capt. Frank J. Ives, Asst. Surgeon, is granted leave of absence for three months, commencing about October 1, 1890, provided one of the Acting Asst. Surgeons serving in the Dept. of the Missouri can be assigned to duty in his stead, at Ft. Sill, Oklahoma Ter., during that time. By direction of the Acting Secretary of War. Par. 26, S. O. 213, A. G. O., Washington, September 11, 1890.

Capt. John J. Cochran, Asst. Surgeon, now on duty at Ft. Adams, R. I., will proceed to Mount Vernon Bks., Ala., and report in person to the commanding officer of that post for temporary duty, and on completion of the duty contemplated, he will return to his proper station. By direction of the Acting Secretary of War. Par. 2, S. O. 214, A. G. O., Washington, September 12, 1890.

Major Henry McElderry, Surgeon, leave of absence for seven days heretofore granted by the Superintendent of the U. S. Military Academy, is extended to November 10, 1890, on account of sickness. By direction of the Acting Secretary of War. Par. 5, S. O. 214, A. G. O., Washington, September 12, 1890.

First Lieut. William N. Suter, Asst. Surgeon, leave of absence granted in S. O. 149, June 26, 1890, from this office, is extended fourteen days. By direction of the Acting Secretary of War. Par. 6, S. O. 214, A. G. O., Washington, September 12, 1890.

Capt. William G. Spencer, Asst. Surgeon, will, upon the abandonment of Ft. Bridges, Wyo. (his present station), report in person to the commanding officer of Ft. Omaha, Neb., for duty at that station, relieving First Lieut. Alfred E. Bradley, Asst. Surgeon. Lieut. Bradley, on being relieved by Capt. Spencer, will report in person to the commanding General, Dept. of the Platte, for duty as attending Surgeon at the headquarters of that Dept. Par. 16, S. O. 214, A. G. O., Washington, September 12, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 20, 1890.

P. A. Surgeon F. W. Olcott, ordered to the U. S. S. "Alert."

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ADDRESSES.

THE DOCTORATE ADDRESS,

*Delivered to the Graduating Class of the Kentucky School of Medicine,
June 19, 1890.*

BY GOVERNOR J. PROCTOR KNOTT,
OF KENTUCKY.

After a humorous exordium which at once put him completely *en rapport* with his audience, Governor Knott said:

Pardon me, however, if I call your attention at the very threshold to the duties and responsibilities of the profession to which you have consecrated your talents, your energies and your lives. No other calling known among men demands a more absolute self-negation than the one you have chosen. No other vocation—not even the sacred ministration of religion itself—requires a more constant exercise of the higher faculties of the human mind, or a more earnest devotion of the purer and nobler attributes of the human soul.

The physician who is thoroughly imbued with the true spirit of the Hippocratic oath not only dedicates his life to the service of his fellowman, but abjures everything that can impair his usefulness, degrade his profession, or debase the dignity of his manhood. Wherever the plaintive voice of human suffering calls—whether from the palace or the hovel, the sumptuous abode of luxurious ease, or the infelicitous wards of the loathsome lazaret-house—regardless of every consideration of his own security or comfort, unmindful of the tempest that may rage around him, or of the insidious virus of contagion that may steal into the citadel of his life with the very air he breathes, he must go. While the life or death of his stricken patient may hang upon his tenderness and skill, he is the anxious sufferer's lodestar of hope, the repository of his confidence, the custodian of his honor, his friend and adviser in his last dark hour, and the comforter of the loved ones who may gather in impotent anguish about his dying couch.

If there is one of your number who has failed to realize, in all their awful solemnity, the tremendous obligations inseparable from such duties and responsibilities, or who has not resolved that so far as God hath given him the capacity, he

will emulate the virtues and rival the skill of the most accomplished of his compeers or the proudest of his predecessors, I would tell him now, in all sincerity and candor, that he has made a grave mistake in his calling—the noble profession of medicine is not for him.

I congratulate myself in the belief, however, that none of you are so ignoble in your aspirations as to be content with the mean promise of the old Spanish proverb "that in a village where every one else is blind the one-eyed man is king." On the contrary, I feel confident that I voice the unanimous sentiment of your class when I say that one who could be degraded enough to take advantage of the unsuspecting credulity of his fellowman, and ignorantly tamper with his life or his health, with no higher motive than the gratification of a sordid, unholy lust for gain, trusting to the kind offices of the undertaker to hide the evidences of his murderous charlatanism out of sight, it would be the basest flattery to call a scoundrel. I am satisfied that there is not one of you who is not inspired by the noble ambition to become, not only the peer of the proudest of your chosen profession, but *princeps inter pares*.

You should remember, however, that such a position among the truly great does not "come by nature," as honest Dogberry supposed to be the case with reading and writing. If you would occupy it you must win it for yourselves. If you would wear the laurel, you must bear the heat and dust of the arena. You can never scale the perilous pinnacle of professional distinction by standing idly at its base and gazing listlessly at the coveted diadem that glitters upon its summit. You must climb the dizzy height with slow and painful toil, and you had better realize that fact at once.

Let me conjure you, therefore, to set about it now. Eschew, this hour and for life, whatever may tend to impair your faculties or impede your progress. Concentrate all the energy of your nature upon the achievement of that one grand object and enter upon it with an invincible confidence in yourselves. Do not mistake me, I pray you. I do not mean the ridiculous self-conceit of the contemptible coxcomb of the profession, who imagines, because he has his diploma, that his number six hat covers all the medical science

that has been developed since the birth of Chiron the Centaur. When I counsel confidence in yourselves, I mean courage—a brave, manly, unconquerable reliance upon your own exertions; an abiding consciousness that whatever man *has* done, man may do again; the cheerful conviction that Hercules helps those who help themselves. You may do this and still incur no risk of being dazzled by your admiration of your own intellectual endowments. Extraordinary as the natural abilities of some of the more brilliant of your profession may appear to you, the mental disparity between them and yourselves is by no means so great as you may possibly suppose. Axtell or Sunol may be able to go a mile, or ten miles, perhaps, much quicker than a common plug, but the plug will make it in his own time if he keeps on plugging.

Remember, that he who is capable of thoroughly mastering the five fundamental rules of arithmetic may, in time, by patient and persistent effort, solve with facility and pleasure the most abstruse proposition in the highest range of mathematics, and make himself as familiar with the sublime machinery of the sidereal universe as with the simplest piece of mechanism fabricated by human hands. What he may lack in natural aptitude he may supply by well-directed energy and patient perseverance. Fix your eye steadily upon the bright goal of your ambition and constantly press toward it

“—Like the Pontic Sea,
Whose icy current and compulsive course
Ne'er feels *retiring* ebb, but keeps due on
To the Propontic and the Hellespont.”

I am aware that when you look over the long catalogue of illustrious names that adorn the annals of your profession, and consider the wonderful contributions they have made to the sciences of medicine and surgery, you are apt to think that your predecessors have left you nothing to do but to practice what they have been taught, or, at best, to glean a well-reaped field where there is no glory to be won and no garlands to be woven. Yet, there was never a graver mistake. Your profession with all its marvelous development in learning and all its astonishing exhibitions of skill, has but rarely approached the domain of scientific truth and anchored in some of its smaller inlets. The occasional adventurer who has gone ashore has only picked up a few trifling pebbles that lay scattered along the beach. The territory remaining to be explored is as illimitable as the universe itself.

The saying is trite, indeed, that of all the great departments of human knowledge, medicine is that in which the accomplished results are most obviously tentative and imperfect; the one in which the range of unrealized possibilities is most varied and extensive, and the one from which the most astonishing and beneficent returns might

be expected if the same patient and intelligent investigation were directed to it that has been employed during the current century in mechanical invention and material development. Let me exhort you, then, to learn, above all things, “to labor and to wait.” The world was not finished in a day; the mountain range, whose snow-clad summit is kissed by the earliest gleam of the morning sun, was not the growth of an hour, but the slow product of myriads of ages. The history of human progress is crowded with illustrations of the fact that we are constantly in contact with principles and conditions which have remained unobserved since creation's dawn, waiting for some patient, inquisitive thinker to recognize and develop them—great terminal truths which may become the prolific sources of incalculable benefits to our race; and for aught we know, the one who will be crowned, by the common acclaim of coming ages, as the greatest of all the discoverers in medical science the world has ever known, from the age of the Asclepiadæ to the present hour, may be sitting at this moment in your midst.

Have you ever traced the tremendous consequences which have frequently resulted from an accidental thought or the most trivial and aimless experiment? Over twenty-five hundred years ago, Thales of Miletos observed that, by rubbing a bit of amber, it was made to attract light objects with which it was brought in contact. Thousands gazed in stupid wonder upon the mysterious phenomenon. It was noticed three hundred years afterward, by Theophrastus, and four hundred years later, by Pliny; yet none of them ever dreamed that, in the subtle agency which they supposed barely capable of lifting a feather, there lurked the strength of a sleeping giant, more marvelous in the magnitude and versatility of its powers than all the fabled genii of the East. But a little less than a century ago, by the most trifling of all possible accidents, the attention of one of your own profession was directed to the same occult force under different and totally unsuspected conditions. His observations upon the accidental discovery he had made inaugurated a series of intelligent experiments, and, to-day, electricity is the ready servant of man in all his manifold necessities. Tractable as the homing dove, it carries his messages around the world with the speed of thought. It is the unerring instrument of the enlightened scientist in his most subtle investigations, the indispensable implement of the ingenious artisan in his most delicate handicraft, and one of the most effective agencies of the skillful physician in relieving the sufferings of his fellow-beings. It propels our machinery with the power of a thousand horses, and mocks the effulgence of the noonday sun with the dazzling splendor of its light. And yet how little we know of the real nature or the ultimate possibilities of that wonderful agency which

would, perhaps, have remained dormant for ages yet to come but for the initial observations of Galvani!

If I have dwelt at undue length upon this familiar illustration, selected at random from a multitude that might be adduced, I have done so to impress upon your minds, not only the pregnant truth that the wide field of useful labor you have selected teems with rich rewards for your intelligent toil, but the paramount importance of constantly cultivating correct habits of observation and thought. Aristotle was right when he said that "incredulity is the source of all wisdom." You should think for yourselves—closely, carefully, patiently and independently upon everything that may come under your notice, that may be at all cognate to your profession, and never be satisfied that you know enough about anything as long as anything about it remains unknown. Take nothing for granted that may seem inconsistent with correct reason or established facts, simply because some one of acknowledged authority may have said it, and reject nothing as unworthy of your investigation on account of its apparent insignificance, or because it does seem to square precisely with the preconceived theories of the faculty.

Had Jenner been less observant, or less inquisitive, or too bigoted, or too indolent for investigation, he would probably have been content to prescribe some simple salve for the pustule on the milkmaid's hand, and thousands would be dying to-day of small-pox who enjoy an absolute immunity from that dangerous and disgusting disease. Whether the old Jesuit fathers taught the doctrine that "the proof of the pudding is in chewing the bag" I do not know; but, if the doctor who accompanied one of their early missions to Peru had not adopted the custom prevalent among the aborigines of chewing the bark in order to ascertain the nature of the tree, it is probable that the discovery of quinine, the *sine qua non* of his more modern professional brethren, would have been postponed for centuries.

In the first year of the present century, Sir Humphrey Davis suggested the employment of nitrous oxide as an anæsthetic in surgery; but as the suggestion came from a layman it was passed unheeded, if not with silent disdain, by the great lights of your profession. Eighteen years later, Michael Faraday called attention to the anæsthetic effects of sulphuric ether, but it was regarded merely as a matter for curious experiment in the lecture-room, but of no practical consequence. Nearly forty years ago, an obscure but inquisitive countryman happened to be present when one of his neighbors was bitten by a rattlesnake. He not only observed the almost instantaneous effect of the poison, but examined the fang, and finding it to be a finely pointed tube through which the virus had been injected into the cir-

culatation of the victim, it occurred to him at once that the effects of an anodyne administered in a similar manner would be equally prompt. He carried the murderous tooth to an intelligent physician, explained its operation, and begged to have an instrument made by which morphine and other medicines might be similarly applied for the relief of human suffering. The doctor smiled at his rustic simplicity, but now he would consider himself everlastingly disgraced if he should be caught without a hypodermic syringe and a little vial of morphine and atropia in his vest pocket.

I mention these facts not only to illustrate the importance of your paying attention to little things, but to warn you not to reject an apparently reasonable suggestion without proper investigation, no matter from what source it may come. The leading principles taught by "the great father of medicine" himself were those of rational empiricism. He neither attempted nor pretended to form his theories from a *priori* reasoning, but made a careful study of the phenomena of nature, and from them deduced such conclusions as those phenomena seemed to justify.

The celebrated Cornelius Celsus, the contemporary, if not an associate, of Horace and Ovid, although a follower of Hippocrates and Asclepiades, was not a blind adherent of any sect. He did not hesitate to dissent from the views of his illustrious prototypes where he thought they were in error, and accepted with equal impartiality whatever he found to commend, whether in the teachings of the Empirics, the Dogmatics, the Methodics or the Eclectics; and the immortal Claudius Galenus himself, the most distinguished and the most esteemed of all the ancient apostles of medical science, while strenuously maintaining the superiority of theory over mere empiricism, blended in his own school the empirical knowledge he had derived from the teachings of Satyrus, Stratoniscus and Eschrion. In short, the man who makes himself truly great in any calling is the one who has sense enough to know a good thing when he sees it, and decision of character enough to make it useful whenever he may find it.

Whatever you may accomplish, however, in your professional career, you should make up your minds not to be surprised to find yourselves deprived of much of the credit that may be justly due you. In your profession, as in all others—

"Full many a flower is born to blush unseen,
And waste its sweetness on the desert air;"

While, on the other hand, full many a name shines upon the envied page of history with a borrowed light to which it is not entitled, and which its owner himself would not pretend to claim.

Both of these ideas are illustrated, to some extent, in the present fate of the celebrated William Harvey. If that illustrious man could return to the earth to-night, he would probably be astounded

to find himself regarded by millions of people, including a large majority of even the more intelligent classes, as the first discoverer of the mere movement of the blood in the human body, a fact familiar to thousands from the earliest antiquity. He was not even the first to suggest the idea of its circulation, which, it is said, was, at least remotely, conjectured by the immortal Stagirite himself, and still more distinctly by Mondino, Berenger and others of more modern times. Whether it was observed by the great Vesalius or not, we have no means of knowing, but it is certain that the leading outlines, not only of the pulmonary but the larger circulation, were taught by his friend and successor, the ill-fated Michael Servetus, more than fifty years before Harvey was born; and still more clearly by others, especially by Harvey's preceptor in anatomy—Fabricius—who pointed out to his pupil the valves in the veins of the extremities, and set his inquisitive mind to investigating their office. If he could stand where I stand and speak to you as I do to-night, he would tell you that he only did what some of you may yet do with respect to some other important but unsettled question in your profession. That he was not willing to sit down, content with what others had ascertained, but that he gathered up all the facts already known, improved upon the knowledge of his predecessors, and, by a series of patient, intelligent and carefully conducted experiments, elaborated an already existing theory, and demonstrated its truth to the exclusion of a doubt.

I have alluded to the example of this famous physician, however, more especially to emphasize the important truth that, without a certain degree of dissatisfaction with the existing condition of professional learning, coupled with a passionate disposition for honest, earnest, independent and intelligent inquiry, anything like progress in medical science is an impossibility. It is universally admitted that among all the brilliant names that illustrate the earlier annals, if not the entire history of your profession, that of Galen stands pre-eminent. Yet, it would have been far better for the human family, perhaps, if Galen had never been born.

The blind, abject, almost idolatrous deference of his successors to his teachings, with all their crudities and absurdities, postponed everything like genuine progress in scientific medicine for centuries. They regarded his writings as the ultimate authority from which there could be no appeal, and rejected with disdainful scorn whatever appeared to be inconsistent with his *dicta*. In their vain attempts to reconcile the theories of their master with the phenomena of nature, they had but little time to interrogate herself, and still less inclination to pursue the study of medical science in those fields in which it can be followed with any assurance of success. Eschewing

everything like originality of thought or independence of inquiry, they went on for more than five hundred years, stifling intelligent investigation and killing their patients according to the most approved methods of Galenian science.

I would warn you, however, that if it should be your fortunate lot to make any great discovery or improvement in the practice of your chosen art, or any very remarkable contribution to medical science, you should be prepared for a general howl of dissent from the less profound and more pretentious of your professional brethren, until it shall have received the approbation of their acknowledged leaders. I am not fully prepared to believe that the man who first suggested the practicability of carrying corn in both ends of the bag when going to mill, instead of the old practice of putting a rock in one end to balance the corn in the other, was actually mobbed by his indignant neighbors as a dangerous revolutionist; but I suppose it is really true that Galileo barely escaped a sound roasting for expressing the opinion that the earth moved around the sun, and not the sun around the earth. It is a fact, at any rate, that the disturber of ancient prejudices, or long-accepted opinions, generally raises a storm about his head, and nowhere has that truth been more frequently or more strikingly illustrated than in the history of the medical profession.

When Galen, at the solicitation of many of the most distinguished philosophers and men of rank, commenced a course of lectures in the imperial city upon the anatomy of the human system, the novelty of his teachings and the bold contempt with which he assailed the long-accepted fallacies of his predecessors raised such a tempest of indignant criticism among his professional rivals, that he was not only compelled to abandon the rostrum, but to get out of Rome. And when Vesalius, in the sixteenth century, defied the authority of Galen, which was still considered supreme, and destroyed by actual demonstration the credit of nearly all the learning to which the earlier masters had pretended; when he swept away the long-venerated rubbish of ancient error and laid the immutable foundation upon which the splendid fabric of modern medical science has been reared, he brought upon himself a perfect deluge of virulent reproach from even the most distinguished of his professional contemporaries. And you will perhaps be surprised to learn that among the foremost of his detractors was the celebrated Fallopius, concerning whom, I have no doubt, you have heard a good deal from your diffident but distinguished Dean, unless his lectures have been too much abridged by his characteristic taciturnity.

When Harvey first published to the world his beautiful demonstration of the true theory of the circulation of the blood, it is said that there was not a single physician over forty years of age, either in

Great Britain or on the continent, who coincided with his views. On the contrary his practice fell away from him, and he was for years the object of the extremest obloquy and abuse. Nor was it until after his experiments had been repeated, and his observations endorsed by many of the most eminent anatomists and physiologists of the period, that his theory was accepted by the far more numerous class of his brethren, who were profound in nothing but their ignorance of scientific truth, and their conceit of their own professional culture and ability.

And so when Dr. Ephraim McDowell published his modest account of his first ovariectomy, some eight years after it was performed, it was denounced as a falsehood, and its author held up by the leading medical and surgical writers of the day as a liar and imposter; and it was not until ten years after that the learned editor of London *Medico-Chirurgical Review*, who had been one of his most malignant satirists, had the grace to thank God that he had lived to ask pardon of the great pioneer surgeon of Kentucky for the injustice he had done him.

It is an ill wind, however, that blows nobody any good; and it is probable that the world is indebted to the intolerance of the medical profession during the fifteenth and sixteenth centuries toward any improvement or innovation in their own peculiar department of learning, for the initial step in the wonderful development of astronomical science which has taken place since that period. About the year 1500, a German physician, becoming disgusted with the bigoted deference to the doctrines of the earlier masters, which seemed to render an advancement in the philosophy or practice of his profession an impossibility, abandoned it and devoted himself to the study of mathematics. He soon detected the absurdities of the Ptolemaic hypothesis concerning our system of planets, and revived the theory of Pythagoras, that the sun was the center of a series of spheres, including our earth, which revolved around it, and also upon their respective axes. For thirty years he labored on the demonstration of that sublime truth, and, tonight, the name of Nicholas Copernicus, the great prototype of Kepler, Galileo, Newton, Herschel and Leverrier, remains written upon the star-decked vault of heaven in characters of ineffable glory, to be hymned by the spheres as long as they shall continue in their wondrous pathway through the skies.

I hope I have made myself clearly understood, urging upon you the importance of thinking and investigating for yourselves. Mark me: I would, by no means, advise you to tamper with the health or trifle with the lives of your patients by reckless or questionable experiments; far from it, indeed. You had infinitely better confine yourselves to catnip, cumfrey and elecampane for the

sake of your own consciences as well as for their safety. I simply mean that, while you should act prudently, you should act independently; that you should not regard everything you see in the text-books as absolutely infallible, nor reject anything because it may not be backed by the *ipse dixit* of some recognized authority in the profession.

John of Salisbury, one of the most celebrated scholars and among the wittiest writers of the twelfth century, has left as a sketch, in his *Polycraticon*, of the average medical graduate of his period, which I beg leave to read to you, in order that you may see the immense difference between them and some of the newly-fledged physicians of the present enlightened day. He says:

"They return from college full of flimsy theories to practice what they have learned. Galen and Hippocrates are continually in their mouths. They speak aphorisms on every subject, and make their hearers stare at their long, unknown and high-sounding words. The good people believe that they can do anything because they pretend to all things. They have but two maxims, which they never violate—never mind the poor; never refuse money from the rich."

We find an occasional survivor of this species even in our own age, and if there is one of you who has made up his mind to prostitute his sublime profession solely for the sordid purpose of accumulating lucre, he will be certain to take his place among them, and you will soon find him resorting to all the artifices of the knavish quack in order to magnify his own importance and to multiply his chances for "gathering gainful pillage."

On a county court day, when the streets are full of country folk, he will rush out of his office, fling his pill-bags across his saddle, mount his horse and gallop off on a suppositious call, as though life or death depended on his speed; and, after an hour or two, he will come galloping back again, run into his office, rush out again and scurry away in the opposite direction. He will be a prompt attendant at the most popular church in town, where he will sit "as demure as a harlot at a christening" until some impecunious emissary, whom he has hired for a trifling consideration to do so, hurries in with a most anxious expression on his countenance and calls him out just as the service has reached its most solemn point.

If he should happen to perform some trifling operation in minor surgery, he will have it paraded in the local newspaper as one of the most astonishing feats of the scalpel since the days of Antyllus or Heliodorus; but if he should venture beyond his depth, and cut off the wrong leg, or have his victim die under the knife, he will contrive to have as little said about it as possible, and satisfy the community that the patient's death was only a question of time anyway.

While constantly parading exaggerated accounts of his own superior learning and skill, he will lose no opportunity to injure his absent rival by insidiously depreciating his merits or openly misrepresenting him behind his back. If he should be called to a patient in the absence of the family physician, he will not fail to pronounce the medicine which the doctor has left a deadly poison, and then prescribe the same thing under another name. If a consulting physician should say, in the presence of the patient, that he might safely rely upon the "*vis medicatrix naturæ*," he will whisper to some officious friend of the sick person standing by: "That will kill him quicker than strychnine." In speaking with one of the unlettered multitude about his practice, he will never use a term his hearer will be likely to understand, if he can think of a technical synonym of "learned length and thundering sound." He will never prescribe such a thing as common poultice, but will recommend a cataplasm of certain ingredients. He will not even suggest a wash of ordinary salt and water; it must be a saturated solution of sodium chloride. As I have already said, however, I am happy in the conviction that none of the gifted and aspiring young men whom I have the honor to address to-night will ever condescend to the low artifices or be content with the degraded level of the vulgar sham, the mere pretender.

Mr. Sergeant Balentyne, the celebrated English barrister, on being asked what was the highest qualification for a Lord Chief-Justice, replied that "a Lord Chief-Justice should, in the first place, be a gentleman, and then, if he should know a little law it would be so much the better." And so I would say, while it may be necessary in the practice of your profession that you should know something about medical science, it is absolutely indispensable that you should be gentlemen! By this I do not mean that you should simply cultivate the graces and practice the ordinary amenities of courteous intercourse common to polite society, but that you should at all times, and under all circumstances, illustrate the heaven-inspired virtues of honest, earnest, noble Christian men. That you should spurn with indignant scorn the low, mean vices of envy, malice and evil speaking, and never suffer yourselves to be betrayed into anything that can degrade your manhood or cast the slightest stain upon the bright escutcheon of your honorable profession. Above all things let your demeanor toward professional brethren be candid, manly and just, and your deportment to your patients kind, considerate and conscientious.

I feel that I owe you an apology for having detained you so long, but while I bid you the heartiest God speed in your chosen career, I trust you will permit me to hope, that if you shall at some time in the great unexplored future that

lies before you recall a single word I have spoken, by which you have been comforted or encouraged in the attainment of the success to which you aspire, you will not regret the courteous attention you have given me, and for which I tender you my profoundest thanks.

ORIGINAL ARTICLES.

STRICTURE OF THE URETHRA IN WOMEN.

Read in the Section of Obstetrics and Gynecology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

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In this paper I limit the term stricture of the urethra to organic contractions in the lumen of the canal not caused by traumatism, incidental to her sex or the result of destructive or malignant disease. In a surgical sense, it is the same condition that we define by this term in the male.

I find it necessary to thus limit the disease, because the affection is supposed to be rarely found in women, that all manner of causes have to be enumerated in order to explain its presence. In the two most recent and elaborate monographs upon the subject, that by Fissiaux¹ and by Hermann,² all manner of accidental conditions are invoked to explain the condition. When the causes of urethral stricture in women are reduced to two, specific urethritis and traumatism principally (Fissiaux), it will be clear to any one who studies it independently and free from the unfortunate bias of the authors, that this method simply perpetuates the prevailing error concerning it.

There are certain reasons why organic contractions of the anterior urethra in women should be expected, as the outcome of her functional life. If we examine the external genitals in women of various ages, some of the most marked changes will be presented by the picture of the urinary meatus and the urethral prominence. What in the virgin is small and compact becomes enlarged in the middle-aged married woman, so that it projects forward between the nymphæ and forms a large, rounded mass bulging downward into the vestibule. The urinary fissure has become irregular, with overlying flaps of the external mucous membrane, one-lobed, bi-lobed, or tri-lobed, in every variety of form. These changes may and do exist without any functional deviation from the normal.

These alterations are evolutionary in character, and are shared in by the other external genitalæ. The gland of the clitoris has become greatly en-

¹ Annales de Gynecologie, January and March, 1879.

² Transactions of the London Obstetrical Society, 1887, p. 27.

larged over the virgin form and its prepuce elongated; the nymphæ have increased many times in breadth and thickness, and projects beyond the commissure of the pudendum, and the myrtiform bodies occlude the vestibule. That the functional activity which is the source of this evolution may easily pass beyond the normal, is proven by the frequency that stricture of the urethra, or condyloma, angioma, caruncle, and irritations are found.

In the sexual act the urinary meatus and prominence are as much exposed to friction and contact as the urethral opening in the male. These organs in one sex have no exposure to morbid causes, that are not equally shared by the other, aside from gestation and pregnancy, which speaking mathematically, is a plus condition as against women. The practical outcome of this is that the woman who has not, at some period of active functional life, suffered from urinary distress, is very rarely met with; and further, I will boldly assert that every man who faithfully follows my method of urethral exploration will confirm, that urethral strictures, or contractions, sufficient to cause symptoms, are as frequently found in women as in men. I express this opinion in no spirit of arrogance or undue self-assertion, but I shall expect every man who offers an opinion to the contrary, other than what may be said hastily in debate, to do so only after he has applied to the study of this subject the modern and approved methods of urethral exploration. He must abandon his authorities and their textbooks, which have nourished a most absurd error, and study this matter for himself from the general surgery standpoint. In the event that there may be some among you who have not examined the literature of the subject, but who may wish to know what gynecological authors have to say about it, I can well afford to give the brief space that this requires.

Skene, in his fifth edition, does not mention the subject. Emmet says that it is rare except as the result of violence. Among older English writers, Churchill says: "My own experience does not qualify me to speak as to the frequency of organic stricture of the female; it can not be very common, or I should have met with it. But I have met with two cases which I suppose to be spasmodic stricture;" and which cases he relates, and which were evidently cases of hysterical retention. West, McClintock, Sir C. M. Clark, Barnes, Baker, Brown, Tait, do not mention the subject. Graily Hewitt says it is rare compared to the other sex, and dismisses it in six lines. The later French authorities do not give it any mention so far as I have examined. The elaborate and painstaking German authors ignore the matter. Even Winckel, in a special treatise on the Urinary Organs of Women, in the "*Handbuch des Frauen Krankheiten*," gives it no con-

sideration worthy of the name. Coming to more modern times in English literature, we find Hart and Barbour, Mundé, Gordelle, Brown, pay it no attention. In the ambitious monograph of Herman already referred to, and which aims to be scientific, the matter is very inadequately treated, and in a manner which proves that the author neglected to apply to his investigations the methods of modern urethral surgery; while the paper of Fissiaux, so far as it advances our knowledge of the subject, might as well have been written a generation past. In the "*American System of Gynecology*," our own Baker starts out with the remarkable statement that stricture of sufficient degree to give rise to urinary symptoms is rarely met with. It is very evident from this that I have a fair field all to myself, as negative evidence never yet proved anything. The mysterious part of the matter is how such a mass of negative evidence was ever able to group itself about a subject so easy of demonstration as this. The mystery is cleared up when we come to examine Skene's book on the "*Diseases of the Bladder and Urethra in Women*."

Dr. Skene gives more importance to the lesion than any other systematic writer, by admitting that it occurs often enough to demand attention. "The form of stricture that will most frequently come under your consideration," he says, "will be a contraction of the meatus urinarius, produced in many cases by too liberal use of caustics in the treatment of abnormal growths at the lower end of the urethra, or from vulvitis." It is in relation to the method of examination directed by Skene, who simply follows in the footsteps of his predecessors in a sort of traditional way, wherein lies the error. He directs that the passage be explored with a sound, using one so large that it will not pass the stricture, thus locating it, and then using a sound that will pass through it, the extent of the obstruction may be known. If a surgeon writing upon male stricture were to direct such a method of exploring the passage, here would be very few strictures of large calibre, as Otis calls them, that we would ever know much about.

It is by methods such as just described that the period of error has been prolonged. Now, there was a time within the memory of many of us when it may have been said that, in an exact and scientific way, we knew very little about stricture of the male urethra; and yet, concerning this, careful instruction had been given for generations. There came, however, with the use of instruments of precision, a period of more exact examination, which not only gave a more perfect, but a far wider range of knowledge. In this way an abnormal state was all but discovered and its outcome given its due value, for previous to this period, strictures of large calibre were, if known, given no practical importance. Previous

to this period the general surgeon gave about the same instructions concerning exploration of the male urethra that Dr. Skene has given for that of the female. It cannot be disputed that, so far as stricture in women is known and treated, it stands to day where the surgery of the male urethra did a generation ago. I date the knowledge of strictures in the male of large and small calibre, their number, location and extent, their consistency and dilatibility, together with the calibre of the passage yet in a normal condition, to the invention and general use of the exploratory bulb, and urethrometer. Previously they were simply able to say that a urethra was strictured, provided the contraction was small enough. If we trust in urethral exploration in women to the sound, we simply learn that we have to deal with a narrowed passage, and we overlook strictures of large calibre entirely; whereas if we explore with the bulbs we learn not only all the sound can reveal, but also the extent, number and location of the constricted points, their firmness and dilatibility, and the differential diameter of each.

Some attention has been given to the question, What is the normal size, or lumen, of the female urethra? I do not understand how a solution of this question can throw any more light upon its strictures, than a knowledge of the average diameter of the vagina would aid us to an understanding of atresia of that passage. The question is, not the diameter of the passage, but, is it free from disease; are there no contracting bands or inflammatory deposits that diminish its size, be they large or small? In the male urethra, Otis has tried to make an average of this kind of practical importance as a guide to the depth of an internal urethrotomy in a given size of the pendent organ, but I believe few surgeons cut according to Otis's table now. Those that I have seen do it, generally incised more extensively than was necessary, especially at the meatus. The accessibility and exceeding dilatibility of the female urethra precludes the necessity of internal urethrotomy, and there is even less need here than in the male to establish a law of average. It is interesting, and may have its usefulness, to know something about the average normal. Dr. Herman, in the article referred to, makes an attempt in this direction. He employs an instrument that cannot be taken as a comparative standard like those made upon the French scale, which are not arbitrary numbers, but express millimeters in circumference. For this purpose he uses Hegar's dilators, which he describes as "cylindrical rods pointed like the small end of an egg," which must be conically pointed sounds. Even in the use of these imperfect instruments he used so much force, that on several occasions he "produced slight lacerations of the mucous membrane."

TABULATION OF DR. HERMAN'S MEASUREMENTS.

Hegar's Dilators.	Equivalent in English scale.	Equivalent in French scale.	No. of persons examined.
No. 7	12	22	55
" 8	14	25	11
" 9	17	29	21
" 10	18	30	15
" 11	Not given.	Unknown.	6
" 12		"	1

The conclusion is that in most cases the healthy female urethra will admit a No. 17 catheter, and nearly all cases a No. 14. In the above table the equivalent in the English scale is approximated upon the American, and I assume that there is no material difference. It is very evident, I believe, that beginning in the above table with Hegar's dilator No. 9, the observer used a dilating degree of force, as the fact of bleeding mucous membrane proves. Had he used a urethrometer or the exploring bulbs, the error of using too much force would have been avoided and his measurements would have had scientific value. This author makes gonorrhœa a very frequent cause, a fact that was overlooked by Winckel. He also regards the urethro-vaginal cellular tissue the homologue of the prostate gland in the male, from the fact that in aged women this septum is thickened and indurated, and this causes narrowing of the urethra. It is difficult to follow Dr. Herman to such a conclusion, and I believe that the majority of observers will dissent from such a comparison. If it were necessary to imagine such a homology, function and situation would suggest the vulvo-vaginal glands. I believe, on the contrary, that the urethral narrowing in aged women is due to the senile involution to be observed in all the genito-urinary apparatus of the sex.

In my own observations to test the calibre of the normal urethra, I noticed the liability to error from the extreme dilatibility of the passage when in a healthy condition, an error more difficult to guard against in using the urethrometer than the bulbs. In the following table the measurements were made by the careful introduction of the bulbs, using no force that could put the tissues upon the stretch.

No. of cases.	French scale—millimeters in circumference at meatus.
20	23
18	24
24	25
9	26
18	27
16	28

This does not express the size of the urethra, but rather that of the meatus, at which point there is a slight narrowing. Beyond this point the measurements were taken by the urethrometer, and the increase in the calibre was represented by 1 to 3 mm.; but if the screw of the instrument was slowly turned, thus applying the dilating force gently, one or two divisions of the

scale could be added to the above without any discomfort to the woman. For this reason measurements must always lack the exactness that insures scientific value, except for those made at the meatus. Bulbs larger than 29 F. I found would not pass the meatus without dilating force, except in cases in which appearances indicated a morbid condition of the part. In my measurements, every case in which blood followed the bulb or urethrometer, was rejected as being in a morbid condition, or as having an excess of force used in the manipulation. There is not a case represented in my table, that the measurement would exclude the idea of stricture, or contracting bands, that is, the stricture of large calibre. This at least has been my experience, but this morbid condition is indicated by urinary symptoms more or less constant, or recurring at long intervals.

Several of the writers who give the subject any attention at all, appear to derive their standard of comparison from stricture in the male. To a certain extent no comparison is possible. Except as the result of traumatism, the impervious urethra or exceeding nervous stricture is not met with in women, but are often met with in men. In connection with an exceedingly crude method of examination, it is this standard of comparison which has so generally led gynecological writers astray on this subject. Further, a narrowing in men that will cause but a slight diminution in the current of urine, never retention, and but rarely dysuria, will produce all these symptoms in women. I believe this to be the true distinction to be made between the sexes in the symptoms of stricture. Women are exposed to all the etiological conditions that men are, plus a few others incidental to their sex, but these in no way contribute to what may be regarded as sexual difference in symptoms. From whatever cause, retention, incontinence, dysuria and stranguary are symptoms much more frequently met with in women than in men, and in consequence slighter pathological changes will cause more active disturbance in the former. If strictures of large calibre in men have the pathological importance that such an accurate observer as Dr. F. H. Otis assigns to them, strictures of a like character have more serious import in women. What Civiale, in 1850, says of male stricture, "that the slightest obstruction in the urethra is able to produce the gravest symptoms," is true with enhanced force in women.

It is not necessary to reason any further from analogy. There is an established method of practice that will bear out the truth of my argument. A long established treatment of dysuria in women has been forcible dilatation of the urethra, an operation usually made with the finger of the operator. I have so treated these cases of painful urination many times; sometimes with success,

and other times with failure. It was difficult to explain the contradiction in results. I have now learned that when I have succeeded in curing my patient I had to deal with a stricture of large calibre—in other words, I had treated a stricture by what in the surgery of the male urethra, is termed divulsion. Since I have begun habitually to examine the urethra with the exploring bulbs in all cases with urinary symptoms, I have never made the operation of forcible dilatation except I wished to examine the cavity of the bladder with the finger. In doing this operation in dysuria I have frequently felt the narrow constricting bands, but without really understanding their nature until I had studied the condition of the passage after the manner of Otis. It is possible to detect stricture of this size with the sound, as resistance is at every point alike, and from the size of the sound that you are able to pass, it does not appear that any stricture is possible. Free as was the opening of the urinary passage, the widely dilatable constricting bands were sufficient to keep up a constant fret of the mucous membrane. I have found these obstructions in urethras that would admit a 28 to 30 F. sound with but very little force, and followed by only a few drops of blood. In exploring, it is well to remember that it is always more easy, as well as less painful to the patient, to introduce a large sound than it is a large bulb. This constant condition of urethral irritation in this group of cases constitutes, I believe, a sexual trait in the different reaction of strictures of this character in the sexes. That which causes frequent and painful micturition in women and greatly disposes to spasmodic retention, will, as a rule, be intractable catarrh in men when situated in the penile passage.

It is remarkable how sensitive the bulbs are in detecting and locating stricture of wide lumen. Sometimes the constrictions are arranged in groups, and a No. 24 or 27 F. bulb will slip along in a series of jerks that offer but little resistance to the hand; but more usually one or two obstructions are found from the middle to the outer half of the passage. The lumen of the normal female urethra is not the same throughout its length. It is contracted toward the meatus, expanded in the middle portion, and contracts again toward the bladder, as may be demonstrated by the urethrometer. One must not, therefore, allow error to occur from the introduction of too large a bulb, which would move with more freedom at one portion of the urethra than another. With one that moves with but little force, the sensation of meeting one of these obstructing bands is so characteristic that there is but little danger of error. They differ in one important particular from obstructions of the same diameter in the male. In women they occupy but a small space longitudinally of the passage, while in the male half an inch to an

inch is sometimes involved. All the symptoms evoked by strictures more contracted are observed in those I have been describing. I know of no differential symptoms by which to distinguish the different degrees of contraction. The gravity of the symptoms does not appear to depend upon the extent to which the lumen of the passage is encroached upon, but rather upon the degree of the irritation existing.

Symptoms of functional disturbance due to stricture have their periods of exacerbation and intermission, so that the patient will give a history of frequent and painful micturition, with intervals of relief of a duration of days, and even weeks. Oftentimes the patient rises in the morning in a comfortable condition, with a renewal of the urinary symptoms toward the latter part of the day, especially if she has been much upon her feet, the disturbance lasting well into the night. The power of control is sometimes impaired, the patient being obliged to promptly respond to the inclination, otherwise there will be an involuntary escape of urine.

The form of stricture that I have most frequently met with, and one that produces the most acute symptoms, is the annular stricture of the meatus. It is a firm ring situated at the verge of the opening, and ranges in calibre from 13 to 20 F. They offer quite a solid resistance to the exploring bulb, which has sometimes to be pressed against the ring for a moment before it yields, and what is even more characteristic, presents about an equal resistance to its withdrawal. Some are of large calibre. I have noted one of 23 F. in which the urinary symptoms were very urgent, and which totally disappeared on the passage of sounds with very slight dilating force. The resistance offered to the withdrawal of the bulbous sound both in the annular stricture at the opening and in the obstructions further up the canal, is one of the most characteristic sensations to the touch presented by these delicate instruments. The treatment of these strictures at the meatus is quite painful, and cocaine ought to be used. In a very few instances I have divided the obstruction upward, but this plan gave no special advantage except in relieving the painful stretch at each passage of the sound.

Very small strictures near the meatus, but not involving the opening—the analogue of what we so frequently meet with in men—I believe are quite rare. In women such an obstruction nearly always involves the meatus. I recall one such case in which the meatus received with difficulty a No. 19 F. bulb and a firmer contraction half an inch beyond. The subject was sixty-two years of age, the mother of several children, and had suffered several years from difficult and painful micturition. In this case I divided the strictures, as dilatation was painful even under cocaine. From the thickened and inverted prepuce, the

hypertrophied right nymphæ with its hardened and corrugated surface, and the general pigmentation of both nymphæ, I suspected long continued masturbation. A long time after the patient confessed that such was the case. This was interesting, as the urethra of this woman presented about the same condition met with in men who have long been subject to this vice.

Persistent retention due to the mechanical obstruction as a symptom, I have not often met with. I believe I would rather express myself to substitute retarded flow for retention. In one case in which a 16 F. bulb passed the meatus with difficulty, the flow of urine was very slow in starting, and the bladder was slowly emptied with a small reluctant stream. In this instance, before any exploration or stretching, the obstruction offered an opening not to exceed 12 F. to the flow of urine. This woman had had gonorrhœa about ten years previous to my treatment. If one looks for symptoms of mechanical obstruction in stricture of women, I fear it would be very misleading. Therein lies one of the obstacles to the general recognition of this condition in women. As a sex, she is continually subject to urethral and bladder symptoms, but without other indications of stricture, that the condition nearly always meets with some other explanation. What in man would inevitably lead to a urethral exploration, even on the part of a very ordinary surgeon, is never made in women, except in cases of exceptional severity.

Another condition sometimes met with at the meatus is what has been called eversion of the mucous membrane of the passage. It is very troublesome and difficult to cure. This is, in my opinion, simply a form of stricture. Cases so treated have made prompt recoveries. Its prototype in the male is the fusiform stricture of the meatus of Otis. This author states that it is rare in the male, and he applies the term congenital to it. In this sex the condition is not revealed except as the result of exploration. In women, however, it is not rare to meet with a rolling out of the mucous lining which presents at the meatus as a red irritable margin. When a full size bulbous sound is introduced, the protruded mucous membrane is pushed before it, and the resistance to its introduction ceases when the bulb is pushed through the ring. On withdrawing the sound, its point is caught by the ring of mucous membrane which is pulled out to its full extent, thus offering considerable resistance to the withdrawal of the bulb.

The point which I wish to impress is that this is essentially a stricture. Those of you who have treated the condition know how disposed it is to return even after the margin is pared or cauterized away. I believe that it is explained by the existence of an annular stricture at the meatus and a subsequent dilatation of the urethra be-

hind it. Of course, I do not allege that this may not occur from dilatation of the urethra without stricture; but the diagnostic use of the bulbous explorers demonstrating the obstruction at the meatus, puts the pathology beyond doubt. With or without excision of prolapsed mucous margin, permanent cure may be attained by gradual dilatation with the sounds. Two cases of this condition, both in middle-aged women, were cured by relieving the stricture at the meatus; with cure of severe urinary symptoms. In old women, in whom it is more frequently found in connection with annular stricture of the meatus, its cure is practically impossible without cure of the stricture.

I do not propose to take up your time with the detail of illustrative cases. The proof of the matter is so simple to everyone who will provide himself with a set of exploring bulbs, and habitually employ them in every case that presents with urinary symptoms, that I do not believe I can make my case stronger with the history of cases, as I urge all to test the accuracy of my statement. In the treatment of stricture the bulbs are of course not used. I make use of graduated steel sounds, the same that I used when in general surgical practice to treat male stricture. The action is two-fold—to dilate gradually and to cause the absorption of the constricting exudate, and that latter end is not attained by sudden and forcible dilatation. The treatment made two or three times a week, extends over a considerable length of time; but the relief given to the patient early in the treatment is very satisfactory. A dilatation of the urethra is no more important than the absorption caused by the passage of the sounds, it implies a more or less prolonged treatment.

The use of electricity as a treatment I have not had any experience with. Fissiaux states it has given good results at his hands, but I have found the use of graduated sounds so satisfactory that I have not been tempted into new ways. I believe that electrolysis so-called, in the sensitive female urethra to be a very painful method, and would not promise any more speedy or permanent results than dilatation.

In conclusion I again urge the employment of the exploring bulbs in all cases of dysuria, with the conviction that those who will faithfully follow my methods, earnestly seeking for the truth, will find ample verification of what I claim concerning the frequency of stricture in women, and the important part it plays in the disabilities of women.

THE UNIVERSITY OF BASEL, the only university in Switzerland that has excluded women students, has just decided to admit them to the medical department.

SOME OF THE VAGARIES OF THE GRIPPE.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY C. F. ULRICH, A.M., M.D.,
OF WHEELING, W. VA.

The influenza, or "grippe," as it is generally called, Protean in its forms and chameleon-like in its aspects, has made a flying trip through our country, and left its multiform impression upon our population. This strange disease enjoys as many titles as a European nobleman: influenza, because it exercises such a decided influence upon all the tissues and functions of the human body; *la grippe*, because, when it once takes hold, it rarely lets go its grip; *rheuma epidemicum*, because, under its dire influence, the universal nose and throat becomes a perennial fountain; *cephalalgia contagiosa*, because of the infernally Plutonian headache it induces; *fallete*, because, when attacked by it, we are driven almost to madness; *coquette*, because it plays with our feelings as a cat does with a mouse or a young lady with her devoted admirers; *petit courier*, because it runs from organ to organ, suffering none to escape, until we almost wish ourselves dead, to escape the torments of the dreadful disease. We might go on multiplying epithets *ad infinitum*, that have been applied to this polymorphous disease; but let this suffice as an introduction to a brief and unvarnished account of the strange antics of this Harlequin of diseases.

It is not my intention to attempt a scientific analysis of this strange visitor among us, which doubtless has been, or will be done during this meeting, by minds much better fitted for the task than your humble writer; desiring only to give a brief sketch of the unwelcome visitor as it appeared in our midst. I cannot give statistics, having none at my command that are reliable; I cannot enter into a scientific discussion of its etiology, because I have not fathomed it; its symptomatology, because that would include a description of all known diseases; its diagnosis, because it resembles all other diseases in some of its forms; its prognosis, because it is as uncertain as the winds. Neither can I say much of its treatment, because, though called upon to treat several hundred cases, I have not succeeded in establishing any fixed principle of treatment, but have simply proceeded in a tentative manner, treating the symptoms as they arose. Therefore, knowing nothing of its causes, though without doubt the bacillus will sooner or later be discovered; but little of its treatment, having only proceeded empirically in the management of the cases that have come under my observation, I have thought it best to speak of the whims and vagaries the disease has been guilty of as seen in the valley of

the Ohio, and more especially in Wheeling and the immediate vicinity.

When it was first announced that the influenza or gripe was upon us, many of the physicians treated the idea with scorn. They said it was nothing more than a catarrhal affection of the mucous membrane, due to the peculiar changeableness of the weather, for you all remember that last winter, in the strict sense of the word, was no winter at all, the weather resembling that of spring more than anything else. Whenever, in December, 1889, a physician pronounced a case "influenza," it was said of him that he was taking advantage of the prevailing panic, to cover up his ignorance, or save himself the trouble of investigating, by pronouncing the case "gripe." Many said: "Oh, they are only frightened by the reports from Europe, and imagine that the terrible disease ravaging that Continent is upon us; while we have really nothing but a series of bad colds from the vicissitudes of the weather." But soon a change came o'er the spirit of their dream. Persons who were seized by the fell destroyer, whether physicians or laymen, confessed their error, and admitted that there was such a disease, and that it was unlike anything they had ever felt before. Having experienced its horrors myself, I can speak feelingly upon the subject. Imagine that you have an iron band placed like a hoop around your brain; that this band has a peculiar screw-like attachment by which it can be tightened. Then suppose that some malignant hand has hold of that screw, and is turning it with fiendish joy until your agony is almost past endurance. This is the first onset of the gripe, from which it doubtless derives its name. Let no one tell me that it is merely a catarrhal affection of the mucous membrane! Those whose brain has been held as in a vice by its relentless grip, know better. There is something more: there is undoubtedly an inflammatory affection of the meninges of the brain and medulla oblongata, acting upon those organs very much as a bone felon does upon the nerves of the finger. This is the initial symptom of almost every case of gripe. But what follows is as various as the catalogue of diseases. This monster has the wonderful faculty of penetrating every weak spot in the human body, rooting up old and almost forgotten complaints, bringing them again to the light of day. Almost every ill that human flesh is heir to is sought out and reproduced by this dire disease. Persons who have been afflicted with catarrhal trouble (and who is there that has not?) have nose and throat turned into a flowing fountain, and cough until they choke in the endeavor to throw off the bronchial accumulations of mucus. One who has been affected in times past with gastric catarrh or intestinal trouble, as soon as the dreadful gripe lays hold on him, is at once seized with pains and cramps in the stomach, retches and vomits, unable to retain

the food which his appetite has induced him to take; or is attacked with colicky pains and perhaps diarrhoea. Has one been formerly afflicted with rheumatism and supposed himself entirely relieved of it; with the first onset of the gripe all his long forgotten pains are on him again, and his rheumatism is again in full possession of his body.

I will mention one case as an example. A friend of mine who, eight years ago, had gone through an attack of rheumatic fever continuing thirteen weeks, but had not been troubled by the malady since, sent for me one day, and I found her stretched in a helpless condition on the bed, unable to move a limb and suffering all the horrors of rheumatism. On questioning her closely, I found that her attack began with that furious pain in the head which characterizes the gripe. Treating her with that fact in view, I succeeded in relieving her in a few days.

A member of my own family had had typhoid fever three years ago and, as frequently occurs, was affected each succeeding year with threatening symptoms which never materialized. But during the prevalence of the gripe, she was attacked by the relentless monster; immediately the typhoid condition was developed and she went through all the stages of the typhoid fever, with, however, decided modifications of the symptoms.

One peculiar case occurred in my practice during the epidemic. A woman had gone through a course of primary and secondary syphilis; but supposed herself entirely cured, having seen nothing for a number of years. During the winter just past she was seized with the gripe, and the old eruption made its appearance again, being especially malignant on the mucous tissue of the mouth, tongue and fauces. I do not make this a typical case, it being the only one of the kind seen by me; but it goes to corroborate the inference drawn from the others.

Women who had suffered from disturbances of the menstrual function and supposed themselves entirely cured of the trouble, upon being attacked by the gripe, experienced a return of the old symptoms and found themselves as bad as ever. Such troubles as nasal and pharyngeal catarrh, gastritis, enteritis, cystitis, etc., being reproduced by an attack of the gripe might be explained by the old theory that it is essentially an affection of the mucous membrane, and that those organs which had gone through such diseases before, being thereby rendered more sensitive and susceptible of inflammation, were the first to feel the weight of the attack. But how shall we explain the rekindling of other diseases: typhoid fever, rheumatism, neuralgia and the host of other diseases that are reawakened after a Rip Van Winkle sleep of many years? What occult power exists in this mysterious agent that is able to resuscitate the dormant powers of a disease that was supposed

to have been long since buried beyond the possibility of resurrection? It certainly is something more than a mere affection of the mucous membrane. There is an occult mystery in the vital processes of health and disease, of growth and decay, that we are as yet unable to fathom, investigate as we may. We know, or think we know, that all the functions of the body originate in and are regulated by the cerebro-spinal and ganglionic system of nerves.

Now, any disease that has such far-reaching influence as to simulate almost every known malady, or to rekindle it when its fires have been extinguished so long as to be almost forgotten by the sufferer, must have its seat in the fountain of all vital action—the brain and the nervous system. It is a well known principle that all moving bodies travel in the path of the least resistance. When the cloud bursts and the rain falls in irresistible torrents on the mountain tops and the water rushes with mighty force down the steep sides, it always selects the beaten paths and gullies made by former rains, where its course is the easiest, meeting with but little resistance. The same principle holds good in disease as in everything else. When the brain, the great electric battery of the human body, becomes diseased and sends its unhealthy currents along the telegraphic wires known as the great network of nerves that permeate every organ of the body, the same rule will be observed, and the diseased conditions will be conducted to the places that have been previously affected. When we take this fact into consideration we can easily account for the otherwise mysterious and inexplicable phenomenon of such a variety of diseases, and such a multiplicity of symptoms all springing out of the gripe. It is true, when we have arrived at this solution, we are still in the dark and not much wiser than before; for we do not know the nature of the enemy that is attacking us, and have not ascertained his vulnerable point. Nevertheless, we have succeeded in locating the trouble and have discovered to what point our main attack must be directed.

We must fight the enemy in his stronghold and, if we succeed in conquering him there, everything will be safe. But if we fail in that, the separate diseases that spring out of this source must be combated, and a serious contest, with doubtful result, is to be expected. The modern antipyretics—antipyrin, antifebrin, phenacetin, to reduce the exalted temperature and control the cerebral excitement; aconitine to retard the great rush of blood which overwhelms the brain—these have been, in my hands, powerful engines for good in the first onset of the disease. For the mucous inflammation which follows and sometimes accompanies this first stage, I have found the hydrastis canadensis, in the form of the colorless fluid extract, of most wonderful efficacy. If, however, we fail in destroying the root of the

evil, it behooves us to make a long fight and beat the enemy out of all his hiding-places, which sometimes tries our skill and patience to the utmost limits. Our treatment must then be the same as though we were dealing with the idiopathic diseases. But I will not venture to say more concerning the treatment; nor do I insist upon the absolute correctness of my theory regarding the nature of the disease.

I merely throw out these few suggestions as the result of my observation of about 300 cases that have come under my treatment since the 1st of January, hoping that my crude ideas will set some of our brain-workers to thinking and cause them to develop ideas that will enable us not only to combat this dreadful disease, in case it should visit us again, but also help us to explain many morbid phenomena that as yet are as a sealed book to our comprehension. It has often been said that afflictions are blessings in disguise, and we who have been afflicted, have scoffed at this and called it the ravings of a cranky preacher. But when such an epidemic as we have just passed through, and with the sequelæ of which we are still battling, induces us to investigate and look deeper into the causes of things than we have done heretofore, the benefit to future generations is not to be calculated.

EAR COMPLICATION FROM CHRONIC CATARRHAL INFLAMMATION OF NOSE AND THROAT.

Read in the Section of Laryngology and Otology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY W. I. EDWARDS, M.D.,
OF NASHVILLE, TENN.

In the short space of twenty minutes allowed to us to read a paper of any importance, we can merely give a few hints or outlines of the intention of our subject, and therefore cannot do justice to the subject or to ourselves, so I will only give a partial and brief notice to the anatomy of parts involved, and to treatment.

In thinking over the various troubles that may arise from catarrh of nose and throat, I find none attended with more pain than non-suppurative inflammation of middle ear. This form may call for prompt and immediate action from the very nature of its severity, and in order to discuss it intelligently we will have to look at the anatomy of the parts involved, as well as the diagnosis, prognosis and treatment.

First, we will look at the nose, and we find both cavities lined with a mucous membrane. This membrane also lines the pharynx, larynx, and Eustachian tubes.

Now we have traced the same membrane from the nose to throat and inner ear. And it is from

the continuity of this membrane that we have ear trouble from catarrh of the nose and throat, which may go on for years with but little trouble, but it is only a question of time when it may prove very serious to the sense of smell, taste or hearing, and the party may at any time contract a new cold of the chronic form, which may give excruciating pain in the ears, and then summons the family physician, who drops a few drops of laudanum and sweet oil into the ear, and tells the patient that it does not amount to much, that it is only earache,—of which they are fully aware, for it is an almost intolerable pain, and often prostrates the most robust men. They, too, often allow the disease to go on and not only rupture the drum, but involve the mastoid cells, which may necessitate trephining; while a careful diagnosis might have defined a different course of treatment and prevented breaking down of the drum, necessitating impairment of hearing, if not total loss; besides the very great pain, and the following discharge, which may prove very annoying.

We also find in chronic catarrh, hypertrophic rhinitis, which involves the mucous membrane and turbinated bones. These bones and tissues become so much involved that it is difficult for the patient to breathe through his nose; often one side will close for a few moments and then open, and the other side close; or we may have hypertrophy of one side and atrophy of the other.

When we have a hypertrophied condition of the nose, we may also have the same condition of the Eustachian tube, causing tinnitus aurium, and impairment of hearing. But the most distressing condition to the patient is the annoyance of the ringing noise in the ears, which often causes loss of sleep and even impairs the mind. And again, we may have, from an abraded surface of the mucous membrane from scabs forming, a polypus formed that may close one side of the nose, or may have one or more on both sides, cutting off all air from the Eustachian tubes, and from pressure, inflammation, and the want of the physiological action of air, we may have pain, tympanitis and impairment of hearing, and all of these to a very distressing condition. I will report a few cases:

Case 1.—Mr. G., aged 50, had been suffering from catarrh for forty years. On examination I found fibromata, or fibrous polypi, in both sides of the nose, protruding from anterior orifice of nose, and extending back and filling the nose, distorting the face; nose looked more like a frog than a nose; tumors extended down the throat; these had been removed three or four times with forceps and cold snare, in the space of thirteen years. His health was broken down, impairment of hearing, with pain in ears, with occasional discharge. I gave tonics, built the patient up as well as possible for his condition, and then re-

moved polypi with galvano-cautery; polypi was so large could not use wire loops, and had to use a cautery knife to remove a part before using loops. Patient being very weak, made two sittings; had but little lost; kept up the tonics, used local treatment, consisting of thoroughly cleansing the parts with biborate and bicarbonate of soda, aqua, carbolic acid in warm camphor water, then spraying the nose with pinus canadensis, carbolic acid and fluid vaseline. Patient made a rapid recovery of health, discharge from ears ceased, all pain relieved, and his hearing restored.

Case 2.—Mr. L., age 62, had been troubled with catarrh for most all his life, and had suffered with severe earache, and loss of hearing in one ear, with distressing ringing noise. I found exostosis of turbinated bones of one side, and echondromata or cartilaginous tumor of the other. Removed this with the galvanic cautery snare without loss of blood, and removed the exostosis of the other side with dental skill, and smoothed the surface with forceps and galvanic cautery knife. Used the same after-treatment of this case as the other reported. Patient made a good recovery of hearing, relieved of tinnitus aurium, and was relieved of the catarrh.

Case 3.—Mr. C., age 71, had been suffering from catarrh for fifty years, attended with all the annoyance of difficult breathing through the nose, scabs forming, spitting, ringing in the ears, and at last was attended with violent pain in the ear, side of face, and head. I was called out of the city to see him; found patient prostrated with high fever, and almost intolerable pain, with five physicians attending him, watching and expecting him to die. Patient had lost power of speech and not able to raise his head. I found temporal and mastoid bone very much involved. I diagnosed pus in mastoid cells, with rapid absorption of pus to brain. I advised trephining; was opposed by some of the physicians, for the reason that they thought he would die in a few hours, and might die while operating; however, the family left it to me. I operated at once and removed a large quantity of pus. Patient slept well that night, was able to sit up in bed next morning to eat his breakfast, and was able to come to Nashville for regular treatment for his catarrh in ten days.

Case 4.—Miss F., age 18. I was called in consultation with her family physician, who had been treating her for a week for earache; found the young lady prostrated with pain in her head and ears, had high fever, could neither eat nor sleep. I diagnosed catarrh of inner ear, with pus in the mastoid cells. I found a hole in drum of ear, but no discharge. History: She had catarrh of nose and throat, and about one year before this attack she had a severe spell of earache, followed by a discharge, which only lasted for a few days. I advised operating on the mastoid

bone at once; physician opposed it. I told them it would have to be done, and the sooner the better, and when they wanted me to let me know. On the next day I was called for to do the work. I operated by cutting down on the bone with a free incision, and probed through the periosteum into the cellular bone, and removed a large amount of thick pus. I syringed the cavity thoroughly with a warm solution of carbolized camphor water, and put in a tent. Patient slept well that night; removed tent twice a day for a week, at which time she was able to come to my office for further treatment of the catarrh of the nose and throat.

Case 5.—Miss F., age 15. Had catarrh of the nose for three years; could not breathe through the nose at all; could only hear watch when pressed to ear, with very distressing ringing in the ears. I found sessile fibrous polypi, which had been removed one year before. I could not reach the base of these tumors through the small contracted orifice, and decided to do Rouge's operation. I gave ether, and dissected the upper lip and nose proper from their points of attachment on the superior maxillary bones, then drew the detached portion upwards, then the anterior nasal cavities were fully exposed, and tumors easily reached. Removed them with galvano-cautery with loss of but little blood, adjusted the nose and lip, which were held in place with firm bandage placed on upper lip, and extending around the head. It healed rapidly and the patient recovered with all the necessary after-treatment. Hearing restored to normal condition, and no disfiguration of face or nose, which is a very great consideration to young ladies. And the doctor who would dare disfigure one of those lovely creatures, just to save time and trouble to himself, is not worthy of the title which we all have the honor to bear. For our calling is second to none in its noble and life persevering efforts to restore the sick, heal the afflicted, and point them to the great High Physician of all, whose ever-watchful eye is on doctor and patient alike, and to whom we all have to give a strict account of our deeds, good and bad.

623½ Church Street.

SOME THOUGHTS ON INEBRIETY.

Read in the Section of Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY J. F. AXTELLE, M.D.,
OF HARTFORD, CONN.

Fred C., æt. 37, came to this city from Nova Scotia twelve years ago, a bright, manly young fellow, and secured a situation as salesman in one of our leading dry-goods houses. He was liked by all who had dealings with him, and was advanced from time to time by his employers. Soon

he got to going out evenings, would drink with a friend when asked, but did not care for it otherwise. This went on for about two years; then he found that when he drank once he wanted more, and would keep it up for two or three days, be sick for a week, and would drink no more for six months. When on some special occasion he would again take a drink, he would then keep it up as before.

About this time he became engaged to be married, but the parents of the young lady objected, having heard of his habits, but finally consented if he would not drink for a year; he accepted the situation and won his bride, but on the night of his wedding got drunk, and kept so for two weeks. From this on for two or three years he would average four sprees a year. About this time he lost his situation. He went to Boston, but became so bad that his wife had to leave him, and came home. He was again thrown out of employment, came back to Hartford, went to work for his old employer, but could not keep sober a month. He soon went through quite a little property which was left him by his father, could not support his family, and his wife's parents had to take her and her child to their home.

About a year ago the wife obtained a divorce for non-support and intemperance, and he then made an unsuccessful attempt to commit suicide by taking laudanum.

Last week I signed papers to have him sent to an insane asylum, and while signing the paper, the thought came to me, why could it not have been signed ten years ago? Has a man the right to be a drunkard? If we admit that he has not, we are ready to proceed with the remedy; but all will not admit this position. They cry out liberty, individual liberty, and the right of the individual to do as he pleases will be forever their watchword. Has the individual such a right? Has he the right to disgrace his family, and to impoverish his wife and children? Has he the right to have children to inherit his weakness?

Instances might be selected of men without family or ties of any kind, and the position taken, that no one is hurt but themselves, but how is there to be any security that they will not ultimately commit some crime, or at least become cares to the public as lunatics or paupers? It seems to me that the unincumbered individual has no right so to live as to damage society and become a burden to the public. It is sheer madness to claim the right of the individual who has a family to drink to excess.

Drunkenness, inebriety, dipsomania, or whatever scientific term we may be pleased to give to the habit of excessive drinking of alcoholics, will be considered and regarded as a disease, as we regard insanity, and the individual so afflicted will be treated and cared for as though he were actually insane.

In many, if not all, public and private asylums, there can be found men and women who are insane in no sense except one habit, and who are treated as insane, yet no one seems to object to it, and the law winks at it. This fact alone shows the drift of unconscious public sentiment, and shows that society does regard such persons as practically insane.

It would perhaps astonish the criminal lawyers to know that a large part, perhaps a third, of the inmates of our asylums for insane, know right from wrong as clearly on most subjects as the best of us; but the trouble is to keep from doing the wrong.

Why should not the man with an ungovernable habit, which will lead him and all that are dear to him to sure destruction, be regarded as powerless to act for himself, just as the suicidal maniacs? Have his children or his friends no rights? Has his wife no legal or moral status? Shall he go on procreating unfortunates like himself, to in time, perhaps, fill poor-houses, jails and asylums?

The strong arm of a benign and merciful law should stop him, should declare him unsound, and place him in confinement, before he has destroyed his property and himself.

CURIOSITIES OF HOMŒOPATHIC PHARMACY.

Read before the Medical Society of the District of Columbia,
April 23, 1890.

BY ROBERT REYBURN, M.D.,

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY, MEDICAL DEPARTMENT OF HOWARD UNIVERSITY, WASHINGTON, D. C.

Having recently obtained a copy of the circular and price list, issued by a dealer in higher potencies residing in New York City, I desire to impart to the members of this Society and the profession, some of the information therein contained. This document is a printed pamphlet of thirty-two pages, and is entitled "Catalogue of Morbific Products, Nosodes, and other Remedies in High Potencies." These remedies are for sale at No. 13 W. 38th St., New York City. By Samuel Swan, M.D.

Glancing over the catalogue, on page 16, we were struck by one article of the materia medica, kept for sale and called "luna, or moonlight." How in the world is this obtained, and what are its properties? Astronomers have long disputed as to whether the rays of the moon possessed any heating power, but why need they any longer be in doubt, when they may be bought by the vial full, and seen and tasted by ordinary mortals?

On page 20, we find three species of *pediculi* (or lice) on the list of remedies to be dispensed, namely: *pediculis pubis*, *pediculis capitis* and *pediculis corporis*. These minute animals we only expect to find on uncleanly persons, and the idea of

swallowing them, or a preparation made from them, no matter how dilute, is rather startling to the uninitiated. The *pediculis corporis*, by-the-way, has a note in brackets after it, stating that this special lot came from Boston. The inquiry then arises in our minds, Why is this? Are the Boston *pediculis* more voracious, or of larger size than those of other cities? What is the cause of their superiority? Unfortunately, the vendor of these delectable preparations does not condescend to inform us upon these points, so we are compelled to remain in ignorance.

On page 1 we find on the list the name "*acarus scabies*" translated "lice insect." As the *acarus* mentioned is the one found in the disease known as the itch (in common parlance), and is not the *pediculis*, there seems to be a (H) itch in the Latin; but trifles like this need never daunt the swallower of preparations like these.

But, thank Heaven, there is on the first page one familiar remedy, viz.: "*adepts anserina*" (goose grease). How well do we remember the vile odor of this substance when applied externally to the neck in our youthful days. To paraphrase Hamlet, "The offense was rank and smelt to Heaven." Never did we imagine we should see it prepared in "High Potencies" and given in granules.

On page 15, "*lachryma filia*" are defined as "Tears from a young girl in great grief and suffering." In ancient Rome small crystal or glass flasks have been found called "*lachrymalia*," which are said to have contained the tears of the mourners. Were these "*lachryma filia*" obtained from such sources, or are they the tears of some modern damsel, mourning, perhaps, like Miss Flora McFlimsey, because she had nothing to wear, or in utter desperation from the lack of a spring bonnet, or it may be crossed in hopeless love?

The explanation of "*flavus irides*" on page 11, is "yellow ray of the spectrum." Here is bottled sunshine with a vengeance! Photographers have long desired to fix the fleeting rays of the sun, and make their pictures glow with the colors of nature, and here we have them prepared and fit for internal medication. Would that we knew the secret of this preparation! One thing is certain, if we *must* swallow globules, it would be much pleasanter to think of swallowing bottled sunshine, than a preparation of *pediculis corporis*, even though they were labelled as coming from the city of Boston.

On page 6 we find, "*carbunculus* on neck of swan very severe." We are not told whether the carbuncle was very severe upon the swan, or whether the pus obtained from it has been very severe upon the unlucky patient who takes it—perhaps both statements may be true.

"*Fel gryllus Americana*" (page 11), or "Brazilian cricket," is said to be beneficial for "sup-

pression of urine with or without pain," and this important fact is also stated, that "a boy who had chills and fever swallowed a live cricket and never had a chill afterwards."

On the first page several dainties are provided for lovers of preparations of the high potencies. One is "*adenia*," or "glands from a person suffering with Hodgkin's disease;" a little further on is the "*Ailanthus* bug," an insect found on the odorous though unfragrant *Ailanthus* tree. On the same page "*Albumenurea*" is defined as "renal albumen," or in other words, the putrid and disgusting products of the decomposition of the human body, as found in diseased urine.

On page 2, "*anthracin*" is said to be "pus from a carbuncle." On page 4 are two delightful compounds: one is from the *Blatta Americana* or "American cockroach," and the second is a more distinguished member of the same family, namely: "*Blatta Orientalis*" or "East Indian cockroach." Farther down the same page is "*Buboin Syphilitica*" or "pus from syphilitic buboes." On page 5 are a number of preparations of calcarea from different parts of the body, as "*calcareo renalis*," or "stone of the kidney," and "*calcareo*" from the lungs and bladder. On page 6 we have three preparations made from the different varieties of catarrh to choose from, viz.: catarrh of the intestines, catarrh of the bladder, and catarrh of the nose. In this case you certainly "pays your money and takes your choice."

Page 7 gives us a little ray of hope that we may not be called upon to swallow any more such vile compounds, for there we find "*cerulia irides*" defined as "blue ray of the spectrum," but as if to dash our newly found hopes to the ground, immediately beneath is given a preparation made from the "chancre of syphilis."

Page 8 gives a remedy for constipation in newly born infants, viz.: colostrum, found in their intestines previous to and after birth. Page 9 gives preparations of two varieties of poisonous snakes, viz.: *crotalus horridus* (rattlesnake) and *crotalus cascavella*. On the same page is "*crusta lactea*," commonly called "milk crust," and found on the heads of sickly or uncleanly babies. Farther down on the same page are preparations of diabetes mellitus, and also of the serum found in cases of dropsy.

Pages 10 and 11 give preparations entitled "*electricitas*" or electricity, and "*galvanismus*" or galvanism. It has been said of our countryman, Franklin, that he brought down the lightning from Heaven for the service of man, but our homœopathic brethren can do more than that, they can make it edible and drinkable for ordinary mortals.

But time fails me, and I can only enumerate a few of the choice morsels obtainable in the high potencies: "*hippозinine*," a preparation from the glands; "*lyssin*" from hydrophobic patients;

"*osteo necrosis*" from necrosed or dead bone; pus from abscess of rectum, and caries of heel, pus from septic abscess.

Page 22 gives us "*rubrum irides*," or red ray of the spectrum, and thus completing the list of rays of light, used in the manufacture of their globules. On page 23 we find four varieties of cancer served up to us, viz.: of the breast, uterus, bowel and face.

Page 25 seems to show that Dr. Brown-Séguard's so-called elixir has been anticipated, for we there find two preparations, one "*testiculo galinæ*," or testicle of the fowl, and "*testiculo muliebris sinistra*," from the left ovary of a woman.

Many other preparations might be given, but I will conclude by giving an extract from the note after page 30. Dr. Swan says that the plan of sending grafts has been adopted, viz.: "If a graft is put into a vial filled with unmedicated pellets, and corked, the whole mass will be medicated in half an hour." Farther down on the same page he says: "When a vial of medicine is nearly emptied, fill it with unmedicated pellets and you will not have to purchase the remedy a second time."

THE CLINIC.

A CLINICAL LECTURE.

Delivered at St. Luke's Hospital, March 26, 1890.

BY HENRY T. BYFORD, M.D.,
OF CHICAGO.

Gentlemen:—As this is the last time I shall meet you here, I shall naturally have more to say and less to do than usual. The amount of practical work to be done during the season, and the limited number of clinic hours at my disposal, twelve in number, allow of little time for talk.

ABSCESS DISCHARGING INTO PERITONEAL CAVITY.

The case now upon the table is exceedingly interesting, for the patient may be said to bear a charmed life. No cat, thrown from a shot tower, ever landed on its feet more triumphantly than does this woman after passing through the extremest perils of the knife. She has been twice within the shadow of the valley of death, yet a high temperature never came to her, nor has a good appetite ever gone from her.

Three months ago my colleague drained a peritoneal cyst situated in the lower abdomen. The cyst wall promptly sloughed off and gave rise to the most foul-smelling, septic and troublesome discharge imaginable. The abscess walls were made up of intestines matted together and had not, after three months, ceased pouring out large quantities of pus. But for the patient's prodigious digestive powers, she would undoubtedly

have, ere this, been forced to obey the summons that awaits all men. Three weeks ago I attempted, with the advice of my colleague, to establish better drainage, in order that the tax upon the patient's system, and coincidentally upon the commissary department of the hospital, might be lessened.

You will remember that upon enlarging the opening, and attempting to make a counter-opening in the left iliac region, the abscess wall parted asunder, and with its residuum of pus and abundance of granulation debris entered the open peritoneal cavity. Not having expected to invade the sacred precinct of that cavity, I had taken no unusual antiseptic precautions either with regard to the patient, the room, the assistants or myself. All hands, sponges, instruments and vessels had been smeared with the pus. There was, however, nothing left but to go ahead and treat the peritoneum on the same principles as an open abscess in any other part of the body. Consequently I cleansed my hands, called for hot water from the faucet (as sterilized water was not prepared), and washed out the peritoneal cavity most thoroughly. A large perforated rubber tube was then passed from the opening in the iliac region at the left border of the suppurating surfaces, through an opening made in the recto-uterine pouch into the vagina and out at the vulva. The pus-secreting area above was packed with an abundance of iodoform gauze extending slightly beyond it all around. Dry aseptic dressing over both ends of the rubber tube and over the iodoform packing completed the operation.

The patient was sitting up with the bed-rest eating a hearty dinner on the seventh day. To-day there is nothing left of the abscess but a narrow sinus extending just under the abdominal wall from the median line incision two and one-half inches toward the anterior iliac spine. I have attached a very small rubber tube to the large one, and now draw it through to leave in place of the large one. As there is practically no discharge I will remove this one in a few days, and send the patient home, where a change of scene and diet will complete the cure.

ENUCLEATION OF OVARIAN AND TUBAL ABSCESSSES, MICKULICZ DRAINAGE.

The iodoform tampon, or Mickulicz drainage, is one of the most valuable of the later improvements in the technique of peritoneal surgery. What could have been more brilliant than the action of the gauze in this case, or the almost parallel case operated upon before you, two weeks ago. In the latter case, after enucleating diseased appendages, including two large abscesses, you will remember that the oozing from the intestinal walls, broad ligaments, posterior surfaces and bottom of the pelvis on both sides threatened, if not promptly checked, to destroy our already exhaust-

ed patient. I made a sack of iodoform gauze to fit the interior of the pelvis and packed it with gauze, whose magical touch immediately transformed the discharge of blood into serum, and the condition of the patient from one of considerable alarm to comparative unsolicitude. The gauze was removed little by little each day, in order to allow the intestines time to fill in the evacuated space. The last gauze was taken out on the eleventh day without any unusual bad symptom having occurred. At present there is an opening two-thirds of an inch deep, one half wide and one inch long, which has not yet shown the least disposition to suppurate, and whose walls are as clean as a freshly cut surface.

THE HEALING OF OPEN WOUNDS WITHOUT SUPPURATION.

The secret of healing a wound without suppuration is really known to but few, although the principle is known to all. The principle involved in the method I use is that germs cannot develop without moisture, and the whole secret consists in keeping the wound dry. But "there's the rub," as Shakespeare would have elegantly expressed it. Nearly all surgeons use powders and medicines and completely fail. An antiseptic powder does not keep large raw surfaces dry, and, under the influence of moisture, decomposes, becomes inert and actually promotes suppuration, for it buries itself in crevices and folds, from which, with its adherent septic material, it cannot be dislodged without being washed with that moisture for which the imbedded germs are confidently waiting.

The way I do is to pack the cavity loosely with sterilized gauze if it be large, or with sterilized absorbent cotton if small, and use a dry aseptic dressing over all. Neither iodoform nor any other powder should come between the packing and the dry gauze over it, for powder interferes with efficient capillary drainage and the all essential drying sterilizing process. The packing should, in extraperitoneal wounds, be changed two to four times daily, according as the discharge is serous or purulent, until the packing is no longer wet through, then once a day, then once in two days until the dried surfaces have contracted. As long as the discharge is purulent or abundant I wash the cutaneous edges with alcohol at each dressing to keep the skin clean. The cavity is merely dried out thoroughly with absorbent cotton or gauze, and neither medicine nor moisture allowed in it. In hospital wards where serous cavities are frequently opened, this method is invaluable, since it enables us almost to do away with suppuration and its dangers.

TRUE PELVIC ABSCESS.

The case of the patient now being anæsthetized is the historical, old fashioned, antiquated, but by no means extinct variety of pelvic abscess, in

which the entire connective tissue of the pelvis is involved. It originated in an acute attack of some kind several months ago, and was evacuated a few weeks afterward through the vagina. Its origin may have been from infection through the uterus and Fallopian tube, a hæmatoma, or from an ulcerating abscess of the tube or ovary discharging into the connective tissue. Infection may in some instances come from inflammation or ulceration of the rectum.

Upon vaginal exploration I discover a hole smaller than a pin's head through which pus may be squeezed. It is, as you can see, half way between the vaginal entrance and the cervix, on the recto-vaginal septum. With sharp-pointed scissors I make an opening large enough to admit a probe into the abscess. I now slit up the whole sinus along the probe making an opening large enough to admit two fingers. By digital examination I find almost the entire pelvic connective tissue excavated, although abundantly fringed and columned with soft granulation tissue, so as to interfere somewhat with the free evacuation of the pus. The rectum passes through the cavity so that the pockets on either side almost meet under it on its sacral aspect. Had it opened into the rectum I think it would have discharged itself more completely and have done better than it has done by this high vaginal opening, although I am, in this opinion, at variance with the majority of teachers. I am now breaking down this irregular and unhealthy granulation tissue with my fingers, and washing out the abscess with a solution of mercuric bichloride in water, 1-2000. I will now stitch this rubber drainage tube, whose end reaches to the sacrum beside the rectum, to the vaginal edges. As it will take a long time for the cavity to contract, it will be necessary later, either to dilate the vaginal opening again, or introduce a self-retaining drainage tube after the orifice has contracted and hardened enough to hold it. For ordinary irrigations I prefer a two per cent. carbolic solution as being safer and more stimulating than a mercuric solution. For washing out abscesses opening into the rectum, plain water is preferable on account of the dangerous absorbant power of the bowel.

RÉSUMÉ.

Gentlemen, this concludes my portion of this course of clinical lectures. In these eleven clinics in this amphitheater, we have had six peritoneal sections, a laceration of the perineum extending high up into the rectum cured by Tait's method of operation, an Alexander's operation, an amputation of the cervix, and the usual number of lacerations of cervix and perineum, uterine curettings, etc. Among the peritoneal sections we have not had a bad symptom; nor a case of suppuration among the plastic operations except in the drainage tube hole of the Alexander oper-

ation. A lesson to be learned is that it is not the atmosphere nor remote surroundings that need occupy our attention, but rather the field of the operation. Strict cleanliness as to all that comes in contact with the patient, whether it be an instrument or finger, an article of clothing, a sponge or what not, will do more to insure good results than all else. With it poor operators even may obtain good results, without it even good operators must have humiliating experiences.

MEDICAL PROGRESS.

BLISTERING BY HYPNOTIC SUGGESTION.—In the *Bolnitchnaia Gazeta Botkina*, Nos. 26, 27 and 28, 1890, p. 650, DR. IAKOV V. RYBALKIN, of St. Petersburg, publishes his remarkable experiments, which confirm the statements made by Presalmins (1840), Focachon, Beaunis, Delbœuf, Forel, Jendrassik, and Krafft-Ebing that cutaneous blisters can be easily raised by hypnotic suggestion. The author's experiments were performed in the presence of a number of the medical officers of the Mariïnskaia Infirmary, the subject being a strongly-made and well-nourished house-painter aged 16, suffering from typical hysteria magna and extremely sensitive to hypnotising procedures and post-hypnotic suggestions. On February 21, at 8.45 P.M., the patient was thrown into a deep hypnotic sleep, and then told that, after awakening, he was to shiver from cold and to approach a stove in the room in order to warm himself; when doing so he was to touch the stove with his right forearm and to contract a severe burn ("pain, redness, heat, bladder,") about the middle of the inner surface of the part. The suggestions were repeated thrice, after which the lad was ordered to awake. He obeyed all the suggestions in the strictest possible manner, and even loudly screamed from pain as soon as the suggested area came in contact with the stove (which was quite cold). On immediately inspecting the part a slight palish swelling, surrounded by a reddish zone, which proved to be painful on touch or pressure, was found exactly at the suggested point. The limb was at once bandaged, and the lad sent to bed (in the room). He could not fall asleep, however, being tormented by an acute "rending" pain caused by the "accident." On removing the bandage at 11 P.M., a considerable swelling with papular erythema was found, the adjacent zone, 4 or 5 centimeters wide, being exceedingly tender. The limb was again securely bandaged, and re-examined at 10 A.M. on the next morning, when there were found two slightly yellowish semitranslucent blisters as large as a nut and a pea respectively, and around them a group of smaller vesicles (each of the size of a

pin's head). On another examination at 3 P.M. (eighteen hours after the "accident"), all the individual blisters proved to have coalesced into one large bladder. Two hours later the blister burst. The after course presented nothing different from an ordinary case of burn.—*British Medical Journal*.

TREATMENT OF ACUTE GONORRHOEA WITH THE CONSTANT CURRENT.—After Apostoli and Laquerrière had published the effect of the constant current upon microorganisms, PROCHOWNIK (*Münchener Med. Wochenschrift*) undertook a similar work and reached a like result, *i. e.*, that the positive pole of a galvanic current possessed distinct anti-mycotic properties. From this he inferred that the application of the positive pole might be useful in certain forms of uterine and cervical catarrh, as well as gonorrhœa. Of this latter class four cases are described in which the application was followed by prompt improvement. The first case was that of a woman infected by her husband on the 2nd of September. Eleven days later she came under the author's care, with typical gonorrhœal inflammation of the cervix and urethra, but only moderate involvement of the vagina. Numerous bacteria were found in the secretions, but they all contained gonococci, and a pure culture of the latter was obtained from the secretion of the cervix. The discharges were thick and of a greenish color. From September 18 until Oct. 5 the battery was employed six times by means of copper sound in the uterus with a current strength of from 80 to 100 milliampères. After the third application the secretion of the cervix was free from gonococci, and after the sixth was free from all germs and remained so for one year, during which time they were occasionally looked for. The cervical secretion after six weeks was clear and has remained so up to the present.

A second case was that of a woman who had been delivered six weeks before the infection. The urethra and vulva were severely inflamed but the vagina remained comparatively free. The disease extended to the subinvolved uterus which discharged thin bloody pus. The patient was treated in the same way as the first case and after seven applications the discharges were free from germs. Shortly after her recovery she again conceived and was delivered of a healthy child.

A third case, that of a young woman, 16½ years of age, with a very narrow vagina. She was at first treated for a severe colpitis; when this was relieved, the positive pole was applied in the uterus. After ten treatments the gonococci had completely disappeared from the discharges. The patient remained under observation for six months, but without any return of the disease.

A fourth case, similar to the second, was treated with equally brilliant results.

The author comes to the conclusion that the

cervix is the most important place for the development of the gonococci, and from this nidus they extend themselves along the mucous membrane of the uterus to the tubes and from there to the cellular tissue of the pelvis. The urethra may be left to take care of itself, as the germs soon disappear, or it may be treated with the current, though the author says that a strength of 30 or 40 milliampères is not tolerated except when cocaine is used. When the vagina is involved it should be irrigated with a solution of sublimate or chloride of zinc, followed by the use of clear water.

SUCCESSFUL REMOVAL OF HYDATID TUMOR OF THE BRAIN.—In the *Australasian Medical Journal* for July, 1890, DR. GRAHAM and MR. GRUBBE record a case recently under their care in which a hydatid tumor was removed from between the dura mater and pia mater of the brain. The patient was a lad sixteen years of age, who suffered from severe headache, nausea, vertigo, double optic neuritis with atrophy, loss of memory, mental dulness, and paresis of the right arm and leg. A tumor involving the left motor area was diagnosed, and Mr. Grubbe trephined over it. He found the bone very thin, not more than ¼ in. thick, and on opening the thickened dura mater a single simple hydatid cyst was seen, and easily extracted. The pia mater was intact. The cyst measured 4 in. in diameter, and held 19 oz. of fluid. The patient recovered. After six weeks he was able to get up and walk, his memory returned, and in all respects he was well except for his blindness. Such a case as this was extremely favorable for surgical treatment, as its situation greatly facilitated exact diagnosis, and its removal was unattended with any injury to the brain itself. It is believed to be the first recorded case of the kind. Dr. Davies Thomas records three cases of recovery from cerebral hydatids, in one of which the cysts were passed through the nose and mouth; in two others they were removed through incisions in the scalp after the tumors had perforated the cranium.—*Lancet*.

HÆMORRHAGE FROM THE CLITORIS DURING LABOR.—MENSINGA (*Internationale Klin. Rundschau*, July 29, 1890) reports an interesting case of this kind. A woman 36 years of age had seven or eight children, and in the most of her labors had employed no physician. The pains in the last labor were very severe and rapid, so that the head was soon on the perinæum, when they ceased and a severe hæmorrhage set in, this continuing for some time. Mensinga was sent for. He completed the labor easily with forceps, without any apparent laceration of the soft parts. The hæmorrhage still continued, notwithstanding that the uterus was fairly well contracted. A closer examination revealed a small rent in the

region of the clitoris from which a fine stream of blood constantly poured. The author refers to the case of Berthod (*Gazette Médicale*, Nr. 33) in which a fatal hæmorrhage took place from rupture of a varix of the clitoris by a fall upon the arm of a bench. He discusses the possibility of the sudden distension of the vulva causing the rupture of a similar varix in this case.

AMERICAN THERAPEUTICS OF DIPHTHERIA.—PROF. A. JACOBI, M.D., in this paper, presented at the Berlin Congress, traced the history of various epidemics extending from 1659, when Samuel Danforth lost "four children by bladders in the windpipe," down to the time (1868) when he furnished a list of 203 cases, by which it became known that the contagion was very active and affected every kind of wound. The present condition of the therapeutics of the disease in North America was marked by the extra attention devoted to prophylaxis both in literature and in practice. The sanitary arrangements made in New York City for combating epidemics of the disease were admirable, the cases being carefully isolated. Practitioners endeavored to preserve the general health of their patients by the use of cold water, and the catarrh of the mucous membranes of the nose and throat were combated with salt water, boracic acid, nitrate of silver, excision of hypertrophied tonsils, etc. Chlorate of potassium was employed to preserve intact or to restore the mucous membrane of the oral cavity, tincture of the chloride of iron for its anti-fermentative and astringent effect, in frequent doses, so that a child of a year takes from three to four grams daily, in twenty or forty doses. The local treatment of diphtheritic wounds or surfaces (circumcised prepuce, vagina) was mostly by tincture of iodine, iodoform in powder or ointments, or solutions of bichloride of mercury, 1 in 1000 or 3000. An extensive list of other drugs was given. Gargles were considered adjuvants when no violence was used in their administration, but nasal injections were gradually taking their place, seeing that they reach the most affected part of the larynx much better and are much better tolerated. Nasal diphtheria would not get well without some warm, mild injection. Conjunctival diphtheria he treated with ice and strong solutions of boracic acid. Referring to the medical treatment of diphtheria, he was of opinion that it was impossible to give too much brandy in this disease, and stated that from 50 to 1000 grams might be given daily with advantage. Alcohol ought to be given early, and a certain quantity in all cases, seeing that heart failure comes unexpectedly, and then stimulation comes generally too late. It was therefore a good practice to give cardiac tonics in time. Strychnine was indispensable in diphtheritic paralysis. The author spoke of the effects of mercury on this disease, and then alluded to the operative treat-

ment by intubation, which had supplanted tracheotomy because of the rapidity, bloodlessness, and equal efficiency with which it can be performed. Its results in the hands of its discoverer, O'Dwyer, were as good as those in tracheotomy. Every case was managed according to its individual indications; isolation was enforced, fluid food given, moderate stimulation resorted to, absolute rest enjoined, even the nasal injections are made in a recumbent or semi-recumbent posture, and complications watched and treated.—*Lancet*.

THE CHANCES OF TERTIARY SYPHILIS.—FOURNIER, before the Congress for Dermatology and Syphiligraphy, held in Paris in August, 1889 (*Annuaire de Dermatol. et. Syph.*), gave his experience in 2,600 cases of syphilis, extending over the past twenty-nine years. The question at what time are tertiary symptoms most likely to appear, was answered by 2,395 cases in the following way: 1. The frequency of tertiary syphilis increases from the first to the third year after infection, reaching the highest point in the third year. 2. The number rapidly falls from the fourth to the eleventh year. In the next decade the number falls more slowly. From the twenty-first to the thirtieth year, tertiary symptoms are seldom, while after thirty years they are very rare indeed.

The relative frequency with which different organs are attacked was in 3,429 cases, as follows: Tertiary syphilide, 787; subcutaneous gumma, 128; tertiary genital forms, 157. The tongue was affected in 152, gums 179, pharynx 71, other mucous membranes 30, bones 336, nose 173, joints 14, tendons (gumma) 3, muscles 12, digestive tract 4, rectum 5, pharynx and trachea 23, lungs and heart 2, aorta 6, liver 9, kidneys 9, testicles 145, eyes 69.

The nervous system was affected with extraordinary frequency, 1,075 cases, nearly one-third of the entire number. The following were the chief forms: Brain syphilis 461, cerebro-spinal symptoms 11, monoplegia 3, medullary syphilis 77, tabes 355, tabes (cerebro-spinal) 45, muscle atrophy 19, general paralysis 32, insanity 9, eye paralysis 57, facial hemiplegia 13, unclassified 11.

ETIOLOGY OF PANOPHTHALMITIS AFTER INJURY FROM A FOREIGN BODY.—POLAWSKA (*Fortschr. d. Med.*) examined twelve eyes that were enucleated for this cause. The vitreous body showed the most important changes. It presented a marked infiltration of small cells, especially in the neighborhood of the foreign body, and also a fibrinous exudate. In this exudate germs were found consisting of bacilli, in the form of strings, nests and masses either free or, as in two cases, enclosed in white blood cells. From the absence of bacilli in the anterior chamber, he was justified in assuming that the bacilli were introduced with the foreign body and then

caused suppuration. Cultures could not be made, owing to the fact that the specimens were preserved in alcohol.

SOMNAL.—The new hypnotic, somnal, has been tested by DR. FRANK WOODBURY, who, in a recent number of the *Dietetic Gazette*, states as his conclusions that instead of depressing the system as chloral does, it slightly stimulates the gastric mucous membrane, relieves nausea and pain, improves the appetite, increases the secretion (probably), and does not cause constipation. The circulation, respiration and temperature are not notably depressed after its administration. It acts, he says, very much like chloral, but is more pleasant to take and not so depressing in its effects upon the nervous system and the circulation.

BROMINE AS A DISINFECTANT.—Bromine as a disinfectant is said to be coming to the front. It is an inexpensive by-product of the manufacture of salt, selling at 70 cents a pound, and in solutions containing one part in weight to about eight hundred of water, it may be used freely without affecting anything which it may touch. A few gallons used daily will remove all ammoniacal odors from stables, or a few quarts will thoroughly deodorize the entire plumbing system of an ordinary house. The undiluted bromine is strongly corrosive, and if it touches the skin causes a painful burn.—*The Pacific Record*.

THE MODE OF ACTION OF PATHOGENIC BACTERIA.—Although the "germ theory of disease" is now generally accepted, and the microorganisms themselves have been demonstrated and cultivated, little is yet known about their mode of producing diseases in their hosts. Various theories have been advanced, but no definite result has been obtained until quite recently. ROUX and YERSIN were the first to make any discoveries; they experimented with the diphtheritic bacillus of Löffler. They found that in cultures of this organism a "poison" existed, soluble in water, which possessed the same properties, when injected into animals, as the pure culture itself, producing acute nephritis, fatty degeneration of the liver, inflammatory oedema at the site of inoculation, and paralysis of the hinder extremities. The poison acted slowly, the local symptoms only appearing after several days. They obtained the poison by filtration of the broth cultures through a Chamberland (porcelain) filter and evaporating the filtrate in a vacuum. They also found this poison is far more abundant in old cultures than in recent ones; that it is precipitated by alcohol, and that it is destroyed at 100° C., and its virulence weakened at a temperature of 58° C. Brieger and C. Frankel have confirmed these experiments and extended them in many ways. They likewise selected Löffler's bacillus

for investigation. For the exhibition of the specific poison they cultivated it on ordinary peptone broth, or in broth which had been mixed with from 4 to 5 per cent. of glycerine and 10 per cent. of serum obtained from ox blood. The culture was filtered through a Chamberland filter, the filtrate evaporated to one-third of its original bulk in a vacuum at a temperature of 30° C. and was then treated with ten times the quantity of absolute alcohol with a few drops of concentrated acetic acid. The mixture was allowed to stand for twelve hours surrounded by ice and then filtered, the precipitate being dissolved in water and again filtered. The filtrate was then evaporated to dryness in a vacuum, and a light amorphous mass, snow white in color, remained. This substance gave the reaction of a proteid, allied to serum albumen. It was insoluble in alcohol, and precipitated by strong mineral acids, ferrocyanide of potassium, and acetic acid. It also gave the biuret reaction, the red coloration with Millon's reagent, the xantho-proteid reaction, and turned the polarized ray to the left. This substance was extremely poisonous, and when injected into animals produced the same symptoms as the culture. Brieger and Frankel found a second proteid in the filtrate, allied to the first in its chemical composition, but not poisonous. The above observations are a great advance in our knowledge of bacteriology, but even more valuable work has been done by DR. SIDNEY MARTIN for the Local Government Board, the results of which he read before the Royal Society on May 22 of this year. Dr. Martin chose the anthrax bacillus for his investigations. He cultivated it on pure alkali-albumen, filtered this through Chamberland's filter, and proved by means of the microscope and further cultivation experiments that the filtrate contained no bacilli or spores. He obtained two poisonous proteids—albumoses—which produced in mice local oedema, and in larger doses slow death in stupor and coma. But here, however, he went further than the German observers; he found also an alkaloid, similar in action to the anthrax albumoses, but much more powerful. The chief chemical characteristic of the purified albumoses, according to Dr. Martin, is their strong alkalinity in solution; as the alkaloid is a strong base and alkaline, he suggests that the alkalinity of the albumoses is due to the alkaloid being in a nascent condition in the albumose molecule. The alkaloids form crystalline salts in the forms of needles and prisms with mineral and oxalic acids. The importance of these observations cannot be too strongly commented on; they are the first of what will probably be a long series of experiments, and will greatly advance our knowledge of microorganisms, and happily lead to improved methods of treatment.—*Lancet*.

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PHTHISIS AND TUBERCULOSIS.

DRS. HENEAGE GIBBES, Professor of Pathology in the University of Michigan, and E. L. SHURLY, Professor of Clinical Medicine in the Detroit College of Medicine, have published a series of papers in the *American Journal of the Medical Sciences*, reviving again, in an altered form, the old question of the identity of phthisis pulmonalis and tuberculosis, which many of our readers have probably been fondly hoping was forever set at rest by the discoveries of KOCH. The experimental and pathological studies which the papers embody, would seem to have been conducted with great care, and, whatever may be thought of the conclusions reached by the authors, some of the facts, as stated by them, need either to be contradicted or explained before the relations of the various diseases commonly classed as tubercular to each other and to the tubercle bacillus can be said to be clearly made out.

Dr. Gibbes, who approaches the subject from the pathological side, claims that phthisis and tuberculosis are absolutely distinct processes, which not only never pass into each other, but, so far as his observation extends, never occur in the same subject. According to him, tubercle consists, histologically, of giant-cells, contained in a reticular stroma. In phthisis, the primary lesion is a broncho-pneumonia, the alveoli and bronchi being filled with small cells, and fibrin, without any giant-cells. Both morbid products may undergo cheesy degeneration, followed by liquefaction and formation of cavities, most frequently in

the apices of the lungs. Both may occur disseminated in small nodules—so-called miliary tuberculosis—indistinguishable to the naked eye, but always entirely distinct in their microscopical appearance.

Believing, as Dr. Gibbes does, in the absolute distinctness of the two processes, it is natural that he should doubt the dependence of both on a common cause—the bacillus of Koch. He claims to find important differences in its distribution in the lesions of the two diseases. In phthisis it is uniformly present at all stages, and is found in cavities in enormous numbers. In tubercle, on the contrary, it is never found until caseation has taken place, and may be absent even after the formation of cavities. He is very emphatic and positive in regard to its absence in the early stages of miliary tubercle, having examined an immense number of specimens, stained after the most approved methods, with the most powerful microscopes, without finding a single bacillus. As the author is an acknowledged authority on the staining of bacteria, it would not seem that his statements could be dismissed on the ground of defective observation, in the absence of reliable statements to the contrary by equally competent observers.

It is claimed by Koch and his followers that a disease, identical in all respects with human tuberculosis, can be produced in animals by inoculating them with a pure culture of the tubercle bacillus, from which all of the original tuberculous matter has been eliminated. On this point Dr. Gibbes first calls in question the accuracy of Koch's experiments, on what seems to us the rather slight ground that his accounts of them do not prove that he took all the precautions which he himself declares to be necessary to avoid the possibility of including some of the original matter. It would certainly have been much more satisfactory if Dr. Gibbes had satisfied himself and informed us, from actual experiment, exactly what the effect of inoculation with a pure culture is. He then goes on to deny the identity of the lesions of artificial tuberculosis with those found in the human subject in either of the diseases under consideration. The nodules found in the lungs and other organs of the subjects of such experiments consist, he says, of collections of round cells, bearing no resemblance to either true reticular tubercle or the broncho-pneumonic lesion of phthisis. They undergo cheesy degeneration,

and bacilli are then found in them at that stage, but are invariably absent in the earliest stage of the disease.

He questions the identity of the bacillus found in bovine tuberculosis with that occurring in the human subject, both on account of its smaller size and because the lesions produced by inoculating rabbits are in some respects dissimilar, bearing more resemblance to those of tuberculosis in the human subject than those resulting from inoculation with human tuberculous matter. He also gives the results of examination of a variety of animals—mammalia, birds and reptiles, dying with what was considered tubercular disease, which we omit as of no special importance in their bearing on the question at issue.

The clinical side of the subject is treated in a separate article by Dr. Shurly, and also in the concluding paper of the series which appears under the names of both collaborators. It can not be said that he adds very much to our previous knowledge. He agrees with Dr. Gibbes as to the non-identity of phthisis and pulmonary tuberculosis, and says that "the careful observer" will be able to distinguish between them, but, although he describes acute, sub-acute and chronic phthisis, he fails either to describe tuberculosis or to indicate by what criteria it is to be distinguished from phthisis. As neither author informs us where we can find the lacking information, it is to be feared that even careful observers may not know what they should look for. As they take the ground that the distinction is an important one in regard to prognosis, phthisis being a curable disease in its earlier stages, while tuberculosis is incurable from the start, it is to be hoped that this deficiency may be supplied when they publish the results of researches which they say they are making in regard to heredity and contagion in these diseases.

Assuming the correctness of these observations, what conclusions may be properly drawn from them in regard to the relations of the bacillus of Koch to the various processes which have been considered tubercular, and in connection with which it is found? Prof. Gibbes does not assert that the bacillus is not the cause of any of the diseases with which it is associated, although he makes his opinion plain that it is not the cause of all of them. In order to answer this question intelligently it may be well to call to mind some

of the facts which may be considered established. One of these is, that the inoculation either of tuberculous matter or of a pure cultivation of the bacillus is capable of producing in the lower animals, a disease, characterized by the development of nodules, in the lungs and elsewhere, which present a certain resemblance to miliary tubercles, and contain, sooner or later, the characteristic bacillus, which disease is capable of being propagated to other animals by inoculation. The criticisms of Prof. Gibbes cannot be considered to invalidate the positive results of numerous observers to this effect. PROF. KOCH reports, in his address before the Berlin Congress, that bacilli which he has had under cultivation for nine years are unchanged except for a slight diminution of virulence. That any of the original matter used for inoculation would, under such conditions, preserve its virulence so long seems, to say the least, very improbable.

The important points raised by Prof. Gibbes in opposition to the theory that the bacillus is the cause of the various diseases that are called tuberculous, are, first, that the lesions are histologically distinct, and, secondly, that the bacillus is absent from the lesions of some of them in their earlier stages.

If we are to accept his histological distinctions as valid, we must believe that inoculation of matter from the lesions of either of two distinct diseases—phthisis and tuberculosis—will produce a third infectious disease, distinct from both. If we accept the results of other observers, we must conclude that the same effect may also be produced by inoculations with the bacillus alone. This would be something as if the inoculation of matter from either measles or small-pox should invariably produce scarlatina. It would seem at least equally probable that the same morbid agent might produce somewhat different reactions under varying circumstances.

In regard to the alleged absence of the bacillus from the early lesions of tuberculosis, this peculiarity appears, according to Prof. Gibbes, to be shared by the disease produced by inoculation. Whatever may be the reason for his failure to find it in the one case may explain its absence in the other.

It would seem, then, that in order to refute the view of Koch and his followers as to the etiology of the tuberculous and phthisical processes, it is

incumbent on Prof. Gibbes to prove that the inoculation of the tubercle bacillus, by itself, is not capable of producing the effects alleged. If its introduction, in minute quantities, into guinea pigs, rabbits, dogs and other animals is capable of setting up in them a fatal infectious disease, it would be strange if its presence, in great abundance, in the human system, should be innocuous.

To question the conclusions drawn by Dr. Gibbes from the facts which he reports is not by any means to depreciate the interest and possible importance of the facts themselves. They seem to offer an inviting field for further study. It may be that the microorganisms in the two forms of disease which he distinguishes are not identical, notwithstanding their apparent similarity. But probably the framing of hypotheses to account for the facts would be better left to the investigators themselves.

PROTRUSION OF THE CERVIX UTERI A CAUSE OF DELAYED LABOR.

Cases of labor, in which there is a prolongation of the anterior lip of cervix pushed downward before the presenting part, are sufficiently frequent and are easily managed. Exceptional cases, however, occur from time to time wherein the accident is a most undesirable cause of protracted labor. The tissues may be so firm, at the external os, that the cervical walls containing the presenting head will be stretched to an exceedingly thin covering and be caused to protrude between the thighs of the patient.

DR. JAENTZER describes such a case in the *Archives de Tocologie*, for May, where a midwife was in attendance. The delayed labor caused the calling in of this physician on a statement that the expansion of the os uteri was complete and that the head of the child was presenting, but that no neck could be felt, by digital examination, on the child above the head, and no uterine cervix. On ocular examination, he found a tumor as large as the head, reddish in color and containing an orifice about $\frac{1}{2}$ an inch in diameter, protruding from the vulva. The occiput of the child, thinly covered by the layer of distended cervical tissue, was presented to the left side of the mother; rotation had not taken place. Anæsthetics were administered and the tense tissues

at the external os were incised and the opening enlarged, by digital manipulation, and the membranes ruptured. The child was dead; it was delivered by traction with little difficulty, the midwife making counter-pressure on the retracted tissues. The cervix was readily restored to position, and the patient, under antiseptic precautions, made a good recovery. It could not be found, by subsequent inquiry, that there was any history of prolapse of the cervix during pregnancy, or of any inflammatory process, causative of the complication in question; its cause remains unknown. It has sometimes happened that women, with a history of specific infection, and with an inflammatory rigidity of the uterine mouth and neck, have had their labors retarded from this cause. But under profound anæsthesia and the use of dilators the obstructing tissues can usually be forced to recede and the labor terminated with or without the use of forceps. DUHRSEN has advised the use of multiple incisions in the cervix in delayed labor due to the rigidity of inflammatory processes, and holds it to be a process nearly devoid of danger, if the incisions be made in many places and not extensively in any one of them, and if antiseptic measures be thoroughly carried out. By this procedure, it is thought that the life of the child may not infrequently be saved, when otherwise it would be lost through the delay incident to other methods of relief.

EX PEDE HERCULEM.

While for the most part it is wise for professional and technical journals to refrain from any controversy with the lay press, there is occasionally such a flagrant invasion of the scientific field, that it would not be wise to pass it by in silence. We refer especially to an editorial in the *Chicago Herald*, a journal devoted to the exploiting of politics, anent "Insanity of Insane Experts." In this article we find the following: "Doctors who make a specialty of insanity are known to become either morbid upon the subject or actually mad." We challenge this statement as one emanating from the inner consciousness of the writer, as nowhere is it supported or affirmed in the literature of medicine. KRAFFT-EBING, BUCKNILL, TUKE, SPITZKA, SAVAGE, MEYNERT and CHARCOT are either morbid or actually mad according to this enlightened "expert!"

That attendants upon the insane are more likely to become insane than those outside of asylums, is admitted, but that this is explained solely by association with the insane will hardly be believed when we reflect that the asylum attendant is frequently overworked, for long hours, and that the occupation is peculiarly trying and full of anxiety. Attendants spend the greater portion of their time within doors and they are disinclined to active exercise when opportunity offers. While these, mostly physical conditions, play the chief rôle in the production of insanity among attendants upon the insane, we are not disposed to deny that association alone may be an important factor, particularly among the mentally weak and imperfectly educated. This idea of mental contagion is embodied by French writers in the *folie à deux*. That this sort of contagion renders all students of psychiatry morbid or mad we are disposed to deny, especially as there are no facts or statistics to support such a conclusion.

The statement that "the number of persons sent to insane asylums and in them made insane, is undoubtedly increased by the want of precision in tests of insanity, and the dependence of ignorant and timid jurymen upon the pretensions and affirmations of experts." If it is true that in erecting palatial hospitals for the insane, we have constructed nothing but factories for lunatics, the sooner they are closed the better. But we think this statement, like the others, must have arisen from the depths of the editor's brain. We must ask for the facts, and if he can produce a single authentic case in the State of Illinois, where a sane person has been sent to an asylum and there made insane, we will admit the truth of the proposition.

By a careful perusal of the editorial we are forced to the conclusion that the writer has himself dabbled in psychiatry, and that he has been infected with the "subtle and insidious intellectual malaria in the atmosphere of insanity." In the future we would advise the writer to avoid this subject;—avoid it, as he would a pestilence!

"WESTERN HEALING" IN CHINA.

The above is an expression used in Chinese cities by those practitioners who desire to have it known that they are learned in foreign medical methods. When a native doctor puts on his

sign-board the words, "western healing," he relies upon this announcement as a means of attracting patients; he appeals to a sentiment which he knows is already widely diffused—so widely, in fact, that it now offers the best method of securing lucrative practice. Such sign-boards are not infrequent and may be found even in the country districts remote from the provincial cities. This fact is more significant when contrasted with some of the incidents in the early history of "western healing" in Canton, as recorded in the earliest reports of medical missionary work in that city. When the first important case of surgery was presented at the Canton hospital, it was necessary to amputate the man's arm with a view to saving his life. This necessity was explained fully to the man and he refused firmly to permit the surgeon to do the operation. It was only by the gift of fifty dollars given the patient by Mr. JARDINE, who was a surgeon by profession and who was to act as assistant to DR. PARKER, the operator, that the man's life was saved. From this point, about half a century ago, the work has grown, by dint of tireless industry, skill and judgment, to the present day; now not a year passes by without the founding of one or more new hospitals in some part of the Flowery Kingdom. The latest movement, recently inaugurated in the United States, is one having for its object the building of the first asylum for the insane which China will possess. This, like the first "western healing" hospital, will have its location at Canton.

EDITORIAL NOTES.

MILK AND ELECTRICITY.—An Italian scientist, Tolomei, has made a study of the souring of milk by thunder-storms, and concludes that this rather annoying phenomena of the dairy and household is explicable on the ground of the production of ozone during such storms. It may not act directly upon the milk to sour it, he thinks, for he prefers not to ignore, or discard, the prevailing opinion that the change is due to the presence of the bacterium-ferment and is allied to other fermentations. He assumes that in the presence of ozone, when it comes into contact with the upper surface of the milk—in the form of a layer superimposed on it, without agitation—the bacterium finds its most favorable

conditions of propagation. Some experiments made by Tolomei go to show that ozone, when electrically generated without detonation, effects the souring of milk more rapidly than when its liberation is abrupt and accompanied with report.

SOUVENIR OF THE BERLIN CONGRESS.—We note that the *British Medical Journal*, for August 23, contains a double-page illustrated sheet giving process-portraits of eight of the leaders of the German-speaking medical profession who took part in the recent International Congress. We see there the faces of Virchow, Koch, Leyden, Von Bergmann, Leibreich and Gerhardt, of Berlin, Billroth of Vienna, and Esmarch of Kiel. These reproduced photographs are not of the finest order of engraved work, yet the faces therein portrayed are sufficiently clear and individual to serve as a remembrance of the occasion and of some of Germany's representative teachers. As it may not be generally known that the *British Medical Journal* has its regularly appointed agent in the United States, we take the occasion here to add that the publishing house of the Blakistons, 1012 Walnut street, Philadelphia, is its representative in this country.

MEDICAL COLLEGES—A COMPARISON OF THEIR REQUIREMENTS.—The *Times and Register* of September 20, contains a valuable article, with tabulated statements of the requirements on the part of medical students by our various colleges, precedent to graduation. It will be found valuable not only for purposes of comparison, but will serve as a basis for determining the average of medical requirements in this country.

AMERICAN RHINOLOGICAL ASSOCIATION.—The eighth annual meeting of this Association will be held at the Gault House, Louisville, Ky., October 6, 7 and 8, 1890. The profession is cordially invited to attend the meetings of the Association. The President, Dr. Arthur G. Hobbs, of Atlanta, Ga., will deliver the opening address. The following named railroads have granted rates of one and one-third: Louisville & Nashville, Queen & Crescent, Louisville Southern, Newport News & Mississippi Valley Co., and the Ohio & Mississippi. These tickets are good for the week, and will include the Mississippi Valley Medical Association, which meets Wednesday, Thursday and Friday of the same week. Be sure and take a certificate from each and every ticket agent from

whom you purchase a ticket on your way to Louisville. Present this to the Secretary for counter-sign, when you will be entitled to return at one-third fare.

THE CANADIAN MEDICAL ASSOCIATION.—At the annual meeting of this association, held in Toronto on September 9, 10, and 11, the following officers were elected for the coming year: President, Dr. T. G. Roddick, of Montreal; General Secretary, Dr. Birkett, of Montreal; Treasurer, Dr. W. H. B. Aikins, of Toronto; Vice-Presidents, Ontario, Dr. A. H. Wright, of Toronto; Quebec, Dr. S. P. Lachapelle, of Montreal; New Brunswick, Dr. S. H. Coburn, of Fredericton; Nova Scotia, Dr. John Stewart, of Pictou; Manitoba, Dr. D. Young, of Selkirk; British Columbia, Dr. E. A. Prager, of Nanaimo; Prince Edward Island, Dr. Taylor, of Charlottetown; Northwest Territories, Dr. E. A. Kennedy, of MacLeod. The next meeting will be held in Montreal.

NEW YORK POLYCLINIC.—The catalogue of the New York Polyclinic shows an attendance for the session of 1889-90 of 422. The Faculty have resolved to exclude all but graduates of regular medical colleges from matriculating at this school. Practitioners who are graduates of a regular medical college, or who have attended one or more courses of lectures at such college, and have a legal permit to practice, will be admitted.

VIRGINIA STATE MEDICAL SOCIETY.—At the meeting of the Virginia State Medical Society, held recently at Rockbridge Alum Springs, the election of officers resulted in the choice of Dr. W. W. Parker, of Richmond, for President, Dr. John W. Dillard, of Lynchburg, Dr. Jacob Michaux, of Richmond, and Dr. H. M. Patterson, of Staunton, First, Second and Third Vice-Presidents, respectively; Dr. Landon B. Edwards, of Richmond, Recording Secretary; Dr. John F. Winn, of Richmond, Corresponding Secretary; and Dr. R. T. Style, of Hollins, Treasurer.

SURGICAL DRESSING FOR SOLDIERS.—The Government of India has sanctioned the issue of a packet of first field dressing, in lieu of a bandage, to every officer and soldier proceeding on active service, irrespective of whether the operations are undertaken against a European power or not.

TOPICS OF THE WEEK.

THE ANTIQUITY OF THE HUMAN RACE.

In the Anthropological Section of the British Medical Association at the recent meeting in Leeds, the President of the Section, in the course of a very able address, referred to the subject, and his remarks are reported by a correspondent of the *Lancet* as follows: He said: "One of the most vital questions was: What is the antiquity of the human race—or rather, what is the antiquity of the earliest objects hitherto found which can with safety be assigned to the handiwork of man? This question is susceptible of being entirely separated from any speculations as to the genetic descent of mankind; and even were it satisfactorily answered to-day, new facts might to-morrow come to light that would again throw the question entirely open. On any view of probabilities, it is in the highest degree unlikely that we shall ever discover the exact cradle of our race, or be able to point to any object as the first product of the energy and intelligence of man. It may, however, be hoped that from time to time fresh discoveries may be made of objects of human art, under such circumstances and conditions as may enable us to infer with certainty that at some given point in the world's history mankind existed, and in sufficient numbers for the relics that attest this existence to show a correspondence among themselves, even when discovered at remote distances from each other. Of late years how little have we heard of any scruples in accepting as a recognized geological fact that, both on the continent of Europe and in these islands, which were then more closely connected with that continent, man existed during what is known as the quaternary period, and was a contemporary of the mammoth and hairy rhinoceros, and of other animals, several of which are either entirely or locally extinct. The principal instances on which the believer in tertiary man relies may be classified under three heads: (1) The presumed discovery of parts of the human skeleton; (2) that of animal bones said to have been cut and worked by the hand of man; and (3) that of flints thought to be artificially fashioned. On the whole, therefore, he thought that the present verdict as to tertiary man must be in the form of 'not proven.' As to the origin and home of the Aryan family, the last twenty years had seen important changes; but, after all, they were speculations merely. In concluding, the speaker said: 'There are, indeed, now but few parts of the world the inhabitants of which have not, through the enterprise of travelers, been brought more or less completely within our knowledge. Even the centre of the dark African continent promises to become as well known as the interior of South America, and to the distinguished traveler who has lately returned among us anthropologists as well as geographers owe their warmest thanks. It is not a little remarkable to find so large a tract of country still inhabited by the same diminutive race of human beings that occupied it at the dawn of European history, and whose existence was dimly recognized by Homer and Herodotus. The story related by the latter about the young men of

the Nasamones who made an expedition into the interior of Libya, and were there taken captive by a race of dwarfs, received curious corroboration from modern travelers. Herodotus may, indeed, slightly err when he reports that the color of these pigmies was black, and when he regards the river on which their principal town was situated as the Nile. Stanley, however, who states that there are two varieties of these pigmies, utterly dissimilar in complexion, conformation of the head, and facial characteristics, was not the first to rediscover this ancient race. At the end of the sixteenth century Andrew Battel, our countryman, who, having been taken captive by the Portuguese, spent many years in the Congo district, gave an account of the Matimbas, a pigmy nation of the height of boys of twelve years old; and in later times Dr. Wolff and others have recorded the existence of the same or similar races in Central Africa."

WORKING HOURS FOR WORKING MEN.

At the recent meeting of the Brighton Sanitation Congress Dr. W. B. Richardson delivered an address upon this subject, to which the *Lancet* makes the following reference:

"He much regretted that at such congresses the working classes could not take an active part throughout with other members, and that they could not have a working man presiding over one of the Sections. But whatever might be the case in the future, this was not at present possible. Work, he proceeded to urge, was every man's portion, and was valuable, not only as a fact, but as an idea provocative of good results even from the humblest worker. Work was hard or difficult according to the will of the worker, and in this respect there was a great deal of difference in the relations of employers with workmen. As regarded any limitation that should be put on work, he said from a sanitary and health point of view eight hours was a good standard, not absolute, because the pressure of work varied, but as a fair average. What was wanted in order to get at that standard was not so much change in the relations between employer and employed as a change in the public mind, the public at large being most exacting in their demands, and making hard workers keep long hours really for no useful purpose whatever. It would be a good point to begin with if the hours of buying and selling could be reduced. Three classes of work were of especial moment: where with bodily exertion the intensest watchfulness was demanded—as, for example, in the case of the railway engine-driver; where it was one continued grind and monotony, as in the case of postmen; and where the work was excessively hard—as in pile-driving. There were occupations in which the body was in a bent position while at work, in which cases the period of eight hours for work was the maximum, and was often too long. Objection might be made to these arguments that man was not a mere machine, but had a mind. But this only made the toil the harder, for the mind was at work all the time. Another objection was that some luxuries, like indulgence in alcoholic drinks, might promote decay more rapidly than the hardest work, and that the

men who had no occasion to work injured themselves by physical labors and pleasures quite as much as those who had to work for their bread. There must also be a better system of recreation during week days, in which music must play a large part—music which could be provided in great extent by the working classes themselves. For health's sake and life's sake, for the health and life of the nation as well as of the individual parts of it, the periods of labor require a great deal of lightening. An example bearing to millions of minds a meaning as beautiful as it was forcible required to be set. The yoke might be made easy, the burden light, before the healthy working heart could beat out, to the full length of days, the healthy body and the healthy mind. Selfishness and want of common sense had to be removed, and it was for associations like the Sanitary Institute to make those reforming ideas known far and wide, and so lead to what they so much desired—the best cultivation of the garden of the world."

ETHER DRINKING.

As our readers are doubtless aware, ether is used largely as an intoxicant in various parts of the North of Ireland, and the practice is stated to have arisen during the teetotal movement so successfully carried on by Father Mathew. Those who had taken the pledge against alcohol not wishing to break it, found that by using ether they could still indulge in the habit of intoxication. The ether can be obtained at almost any hour. It is rapid in its action, and the effect disappears shortly; but the chief attraction is in the small quantity (about a tablespoonful or less), and the cheapness of the drug. Methylated ether being the cheapest form, is the kind generally used, and as its cost is about one penny an ounce, its consumption is very great.—*Brit. Med. Jour.*

STATE MEDICINE.

In private life the office of the physician is to subdue or mitigate illness, as far as possible, so that his patients may be able to devote themselves to their work or pleasures. To this end, in addition to his combat with actually developed disease, his advice is freely tendered respecting personal hygiene—habits of diet, of dress, occupation, exposure, etc.

Toward the aggregated people, as massed into States, the medical profession as a body occupies a correlative position.

It is our duty, as a class, to indicate to the governing powers the best devised means of protecting the citizens of the Republic against preventable bodily ills. Medicine is, consequently, to a far greater extent than is officially or popularly recognized, of economic importance to the Government.

However costly be its work, surely public hygiene saves more to the State than is actually expended. Countless lives are preserved, the waste of disease minimized, and material production or exchange in a relative ratio is increased. This point, capable of much elaboration, should be constantly brought to the attention of legislators. Scarcely anything can be more important

to the community than the preservation of its present and future effective force. The commander is idolized who in time gains a glorious victory at the sacrifice of comparatively few men. Peace hath its victories no less than war, we are told, and this work of State medicine, under whatsoever name it be carried on, is surely one of the chiefest.

This country of ours, so vast in domain, with so many diversities of climate, such an extensive coast line, such a mobile population, flooded constantly by a stream of immigration from all parts of the Old World, peculiarly exposed to the importation of virulent infections, stands in special need of public prophylaxis.

It is gratifying, therefore, to know that of late years earnest study and strenuous effort have been devoted to the solution of problems relative to public health. A number of able papers upon sanitation were presented to the recent meeting of the American Medical Association.—Dr. John V. Shoemaker, *Tenn. Health Bulletin.*

A SUBSTITUTE FOR TOBACCO.

Many different vegetable substances used as stimulating beverages in widely distant parts of the world have been shown to contain caffeine as their active principle. Only one substitute for tobacco has, however, yet been discovered. This is the leaves of the *duboisia Hopwoodii*, a shrub growing in Australia, the leaves of which are chewed by the blacks in the same way and for the same purpose as tobacco is chewed. The leaves contain an alkaloid piturine, which is said by certain chemists to be identical with nicotine, but more probably is only closely allied to it. Messrs. Langley and Dickinson have recently shown that the actions of nicotine and piturine are in every respect identical.

THE HEART-BEAT AFTER DEATH.

A few days ago a criminal was executed at Epinal, France. Immediately after the execution, which was effected very rapidly, the corpse was given over to Dr. Gley, Professeur Agrégé at the Paris Medical Faculty. The heart beats were observed during six minutes after death. Dr. Gley was able to study auricular and ventricular contraction, which he observed to be independent of each other. Dr. Hallett examined the dead body of another criminal executed at Montreuil, and detected the heart beats a quarter of an hour after death.

CURING CONSUMPTION BY INOCULATION.

Whatever may be the results of Dr. Koch's experiments, about to be made, of curing consumption by inoculation, they are sure to lead to considerable disagreement among doctors; and, though success should crown his efforts, it is safe to predict that years will be required to introduce the process. In the meantime we may expect a renewal of the discussions that attend every proposed system of inoculation for any purpose. The importance of finding a cure for consumption will, however, excite general interest in the experiments to be made.—*Times and Register.*

PRACTICAL NOTES.

TREATMENT OF A "COLD" BY SALICYLATE OF SODA.

The *Memphis Med. Jour.* says of this remedy: Salicylate of sodium in free doses give as satisfactory results in the treatment of "bad colds" as it does in cutting short tonsillitis. Sodii salicylatis, ʒss; syr. auranti cort., ʒss; aquæ menth. piper., ad. ʒiv. M. Sig. A dessertspoonful every three or four hours. A dose every three hours until a free specific influence of the salicylate—tinnitus aurium—is observed—will so far control the symptoms that the aching of the brow, eyes, nose, etc., will cease. The sneezing and "running from the nose" will also abate and will disappear in a few days, not leaving, as is usual under other treatment, a cough, from the extension of the inflammation to the bronchial tubes.

BOILED WATER.

If there is the least suspicion that the water-supply is polluted, get the small quantity to be used for drinking purposes from some source entirely above suspicion. If this is impracticable, boil all water for drinking, and to remove the insipid taste of boiled water, filter it. Even infected water used in cooking, and in making tea or coffee, is undoubtedly entirely safe, providing it has actually been boiled.—*Sanitary Inspector.*

ANTISEPTOL.

The following method of preparing antiseptol, the trivial name given by M. Yvon to cinchonine iodo-sulphate, is given by the *Pharmaceutical Journal*: Dissolve 25 grams of cinchonine sulphate in two litres of water, and precipitate this with a solution of 20 grams of potassium iodide and 10 grams of iodine in a litre of water. The light voluminous kermes brown precipitate that is produced is described as being inodorous, insoluble in water, soluble in alcohol and in chloroform, and as containing 50 per cent. of iodine. It is said to be an efficient substitute for iodoform.

CORROSIVE SUBLIMATE SOLUTIONS.

We have occasion so frequently to recommend the use of a solution of corrosive sublimate to destroy the germs of disease, that it seems well to give some instructions for its preparation. To make a standard solution, from which the weaker solutions may be made, take four ounces of corrosive sublimate and one pound of sulphate of copper, and dissolve them in one gallon of water.

To make a solution of 1 to 500, add 8 ounces of the above to 1 gallon of water. To make a solution of 1 to 1000, add 4 ounces of the above to 1 gallon of water. To make a solution of 1 to 2000,

add 2 ounces of the above to 1 gallon of water. Remember that these solutions, while most effective in the destruction of disease germs, are, at the same time, highly poisonous.—*Annals of Hygiene.*

PRESCRIPTION OF PEPSIN WITH ANTACID.

Dr. I. N. Love, of St. Louis, offers the following prescription as a pleasant antacid in the summer disturbances of children, where there is a history of several days' looseness of the bowels or frequent evacuations:

Listerine,
Glycerine,
Brandy (best),
Syrup of tolu, of each two drachms.
Essence of pepsin (Fairchild's), one ounce.

In this combination Dr. Love does not find that the alkaline constituents of the listerine interferes with the action of the pepsin; the clinical results have been satisfactory, although the dictum of the chemist would lead one to expect an impaired activity.—*Dietetic Gazette.*

TREATMENT OF VARIOLA.

Dr. Gawalowski reports excellent success in the treatment of variola with baths of permanganate of potassium. The salt is added until the water is of a rose red color. By this method the temperature is lowered, the pustules disappear, and recovery takes place rapidly.—*Revue de Therap. Med. Chir.*

PRESCRIPTION FOR BRONCHITIS.

Tincture of hyoscyamus,
Compound spirit of ether,
Syrup of tolu,
Syrup of wild cherry,
Water, equal parts of each.

The dose of this is a teaspoonful.

—Dr. E. J. Janeway, *Southern Med. Record.*

AMENORRHOEA.

Prof. Parvin, in cases of amenorrhœa in young girls, especially if anæmic, recommends the following pill very highly:

R. Ferri sulphat. exsic.,
Terebinthinæ albæ, aa gr. j.
Pulv. aloës, gr. ʒj.
Use such a pill t. d.

TREATMENT FOR SLEEPLESSNESS AND DELIRIUM.

In a case of sleeplessness of typhoid fever, Prof. Da Costa described urethran, grs. xx, to be repeated once. In a case of delirium in a man who had pneumonia he used paraldehyde ʒj with an equal quantity of oil of sweet almonds. If it will do good, three doses are sufficient.—*College and Clinical Record.*

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR REGULAR CORRESPONDENT.)

Curious Statistics of Longevity—Relative Mortality amongst European Troops—The Effects of Influenza on Hurts and Surgical Accidents and Wounds—Ladies of Title and Foreign Princesses among the Ranks of Trained Nurses—The "Asclepiad" on Fasting—Sulphate of Copper as a Disinfectant—Annual Report of the Inspector of Retreats—A New Spray to produce Local Anæsthesia—Medical Aid for Indian Women—The Inconveniences of Fashions in Medicines.

Some curious statistics of longevity have just been published by the German Government. It appears that in 1888 there were ninety-one persons in Prussia who were over a hundred years old, and between 1864 and 1888 upwards of seven thousand persons of over a hundred died, and of these one hundred and fifty-five were more than one hundred and nine.

Some details have just been published on the relative mortality amongst European troops during time of peace. As one might suppose, the Spanish troops give the highest standard of mortality, and that not because the soldiers are weakly so much as the sanitary arrangements are inadequate or neglected. The deaths represent 13 in a thousand. Russia comes next, but the interval is large. The mortality is about 9 in the thousand. Then follows the Italians with 7.74. So far the series is almost as a shrewd observer might guess it would be. What follows is more perplexing and more interesting. Austrian, French, English, Belgian and German; that is the order. In round numbers the deaths of Austrian soldiers are in the thousand 7, of French 6, of English a little over 5, of Belgian a little over 4, and of Germans a little under 4. This is a great triumph for the Germans, the more so as the largeness of their army ensures a certain reliability in their statistics. One other detail is given. The ravages of consumption are enormously greater in the case of the British army than of any other nationality. In this case the French are the most favored.

Attention is drawn to the effect of influenza on hurts and surgical accidents and wounds. It also affects weak eyes. The want of recuperative force in persons undergoing surgical operations who were attacked with influenza has been most marked. The flesh did not heal, and this was also the case in patients who had had influenza but who were convalescent when operated upon.

One of the medical papers takes occasion to comment upon the strongly fashionable favor which nursing is now enjoying, and points to the

fact that English ladies of title and foreign princesses and countesses are now found among the ranks of trained nurses. It may be supposed that ladies of this position who take it up as a profession do so out of honest devotion to the work, even where the calling is adopted for bread winning it is not without considerable advantages. The fear is that it will become overcrowded, as indeed it begins appreciably to be. In what other female profession is there so well conceived a pension fund as that of the nurses?

Referring to the recent fasting ordeals in England and America the *Asclepiad* is of opinion that it may now be assumed that a forty or forty-two days fast with continuance of life is well within the order of natural phenomena, and that the human body has a possible power of endurance from ten to eleven days beyond what has recently been attempted, the extreme limit being fifty-three to fifty-five days. It follows that the technical opinion on fasting given in coroner's courts and in courts of justice, as well as the opinion that will have to be written in technical and standard works of medical jurisprudence, must in future be considerably modified. Another lesson is the long time life can be sustained by water alone. The writer of the article further notes the curious fact that where the disposition to starve goes with the starving the powers of endurance are immensely prolonged.

The Spanish authorities, as also the French and the Austrians, are insisting upon the exclusive employment of sulphate of copper for the disinfection of evacuations (vomits and fæcal matter) and of linen, etc., in the sick room. It has also to be used for washing the face and hands of persons in contact with choleraic patients. In most cases this disinfectant is being given away gratis by the administration to those applying for it. In the report on disinfectants recently prepared at the instance of the Hygienic Institute and Medical Direction of Buda Pesth, based upon exhaustive researches, the use of sulphate of copper is urged as the best of all disinfectants—better than carbolic acid in any form and incomparably better than sublimate and all the more recently introduced disinfectants. Laxivated ashes are commended as a disinfectant, especially for privies, as also lime wash. Both are pronounced inferior to copper sulphate.

The Home Office has just issued the tenth annual report of the Inspector of Retreats with respect to six retreats licensed under the Inebriates Acts, 1879 and 1888. It is said that but for the somewhat formidable attestation before the magistrates the majority of those now entering the homes as private patients would be willing to avail themselves of the provisions of the Acts. The licensee of one retreat writes: "The number of applications received for admissions has been very high, amounting often to 12 and 14 a week,

but alas, only a tithe of the cases are received, owing to the impossibility of securing the consent of the patients to being placed under restraint, and I fear that until some alteration is made in the law the usefulness of these retreats will be very much restricted." Likely patients are very sensitive and increased willingness among them to take advantage of the benefits of these homes is ascribed to the removal in the altered title of the Act of the obnoxious epithet "habitual drunkard." It is complained that patients show a strong tendency to enter a home for an insufficient period. Hence come disheartening breakdowns, not immediate, as a rule, but upon the first cause, from extra excitement—a marriage or a death, a pecuniary loss or a gain, a holiday or extra worry alike may serve to prove that the recuperative work has been but half done. Plenty of open air exercise, with the maintenance of a cheerful spirit in the home are especially commended as important factors in the curative treatment of inebriety.

Local anæsthesia is produced at one of the leading hospitals by means of a spray composed of ten parts of chloroform, fifteen parts of ether and one part of menthol. After one minute's application of this compound spray, complete anæsthesia of the skin and neighboring tissues is produced and will persist from two to six minutes. This suffices for some minor operations, such as opening an abscess of the cervical glands, incising a deep-seated whitlow or excising an epithelioma of the nose, etc.

The efforts made in providing medical aid for Indian women are bearing good fruit. The Dufferin Fund now employs thirty qualified lady doctors and has 230 ladies under training as nurses. So far it reckons that its benefits have reached some 200,000 poor native women, but as Lady Dufferin herself asks, what is this among so many? Taking, however, into consideration the different Medical and Lenana Missions, the total sum of good accomplished in this direction make up a very considerable whole. It is a rule strictly observed by the Dufferin Fund that all those whom it employs shall be fully trained and highly qualified, and by insisting upon this condition it is securing the best medical services which women are capable of rendering.

In his presidential address at the Pharmaceutical Annual Conference at Leeds, the President dwelt upon the inconveniences of fashions in medicines. The great change in our materia medica that has taken place during the last 30 years has on the whole been beneficial, but the president nevertheless deplored the unfortunate habit of running after new remedies. It is a startling token of the spread of the public faith in patent medicines that the government stamp duty on these nostrums has risen since 1860 from £43,000 to £220,000 per annum, or nearly fivefold. Alto-

gether the English public are calculated to spend about 1¼ millions sterling every year on these articles alone.

G. O. M.

DOMESTIC CORRESPONDENCE.

The New York State Examination Act.

To the Editor.—In view of Dr. Carroll's letter in *THE JOURNAL* of September 13, 1890, it would seem proper for me to add a final word, which I promise shall be the last.

As I did not, in my letter of August 30, attempt to defend the Act in question, but did point out the misrepresentations of Dr. Carroll in regard to the Medical Society of the State of New York, which any one unprejudiced could readily see was the sole purpose of my communication, it is difficult to understand how he can say that I misapprehend "both the intention of my [his] criticism and the act which he defends." When a man of presumed information asserts that there was a time in its history when but "two [members] per annum out of the many 'eligibles' could be elected" in the Society in question, there would appear to be very little reason to expect any gain from further discussion with him on that point. As the question of "code" is foreign to the object in view, I beg to decline a discussion of that subject also; particularly as there are other more important questions that engage the attention of the medical profession just at present.

WILLIAM WARREN POTTER.

284 Franklin Street, Buffalo, Sept. 20, 1890.

NEW INSTRUMENTS.

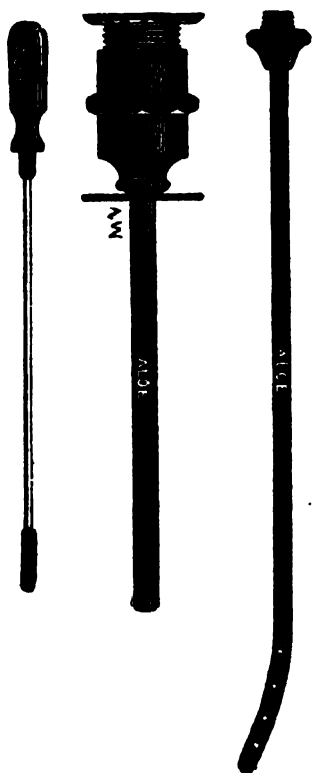
MODIFICATION OF LEWIS' URETHRAL APPLICATOR.

BY G. FRANK LYDSTON, M.D.,
OF CHICAGO, ILL.

Dr. Bransford Lewis, of St. Louis, Mo., recently published, in *THE JOURNAL*, a very ingenious applicator for the purpose of applying dense, oily liquids to the urethra. The instrument consisted of a round box with a tight-fitting cover, and a rubber tube for introduction into the urethra. The cover is provided with a thread which tightly fits a female screw with which the inner surface of the box is provided. The ointment that is to be applied is placed in the box, the tube is introduced into the urethra and the cover screwed in until the required quantity of the medicament has been forced into the canal.

As the soft rubber tube is rather unmanageable

ble, I have devised a modification of the instrument, in which a hard rubber endoscopic tube is utilized instead of the soft tube. Another detachable tube, slightly curved near the point, is used for the cervix uteri.



I can endorse this apparatus as an efficient means of medicating the urethra and cervix in chronic inflammatory affections. I do not, however, recommend its use in acute affections of these parts.

Opera House Block.

NECROLOGY.

Death of Sir Edwin Chadwick.

Few men have deserved better of their country than the veteran sanitarian, whose death at the advanced age of 91, we have to record. His investigations of the sanitary condition of London, dating back to 1847, were the official starting point of a reorganization of the Health Department, and laid the public legislative basis of the first of a series of sanitary reforms which have been of inestimable value during the last half century in the saving of life and diminution of sickness and disablement. His subsequent services to the cause of army health reform and his continuous devotion to great and small questions of public and personal sanitation, placed him

quite in the first rank of non-medical sanitary reformers. It has always been the great failing of this class of valuable public men, while assimilating the facts and conclusions placed at their disposal by great investigators such as Grainger, Snow, Farr, Rumsey, Parkes, and Simon, to assume to themselves a much larger share of merit in the building up of the edifice of public sanitation than, under any searching investigation, properly belonged to them. No one, however, will more cheerfully admit, or indeed, enforce than ourselves—speaking on behalf of medical men—the immense claims of Sir Edwin Chadwick to public gratitude, and the great services which he rendered by the application which he made of the medical knowledge placed at his disposal, and of the principles which the great sanitary reformers to whom we refer laid down for his guidance, and of the public whom he addressed. It has been aptly observed that had he, as a military man, succeeded in destroying one-hundredth part of the lives which he was prominent in assisting to save, his statue would have been erected long since in more than one of the great cities of the empire, and he would have been loaded with honors and titles. As it is, it was not until he attained the age of 90 that he received the honor of knighthood. Through a long series of years he languished in the shade of official displeasure and retirement, and it was only his indomitable energy, untiring industry, and capacity for clear statement and the summary of voluminous detail which enabled him frequently to arrest public attention to his amateur utterances on subjects on which he ought to have been enabled to speak with official weight. His career was one of unchecked labor and unalloyed usefulness, and his memory will remain for many long years as that of one of the greatest and least rewarded benefactors of the people of this kingdom. It will be interesting to see what, if any, public recognition is made—now that he has passed away—of so distinguished a career and such vast services.—*Brit. Med. Journal.*

William Kitchen Parker, M.D.

Dr. William Kitchen Parker, for many years professor in comparative anatomy at the Royal College of Surgeons, England, died in July last at Cardiff, aged 67 years. He was one of the most eminent morphological anatomists of his day and the author of many valuable works, among which may be mentioned his "Morphology of the Skull," "The Shoulder Girdle" and "Mammalian Descent." For many years the Royal Society appropriated annually a large share of its research funds to publish and illustrate his monographs and papers. During much of the time that he was most active in original research and in the publication of his valuable

works, he was also engaged in general practice to get a living. A few years ago, the government granted him a small pension, on which he retired and devoted his whole time to the anatomical studies he loved so well. He was an enthusiast, a vigorous and indomitable scientist, and pre-eminent for his care in giving credit to his fellow-workers who were enabled to add anything to the sum of knowledge in the fields in which he worked.

BOOK REVIEWS.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION FOR THE YEAR 1889. Volume VI, Edited for the Association by EDWARD K. DUNHAM, M.D., of New York City, and published by the Republican Press Association, Concord, N. H., and J. H. Vail & Co., New York. 1890.

The sixth volume of Transactions of the Association has just come to hand. The Committee on Publication consisted of Drs. Alfred L. Carroll, of New York County, Chairman; Glover C. Arnold, of New York County; William B. Eager, of Orange County; J. W. S. Gouley, New York County; John H. Hinton, of New York County; John G. Truax, of New York County; and E. D. Ferguson, of Rensselaer County.

The volume of 450 pages is published in a style creditable to the publishers, and bears evidence of the most painstaking labor on the part of the Editor, Dr. Edward K. Dunham.

The sixth annual meeting convened at Hotel Brunswick, New York City, September 25, 26 and 27, 1889. President, Wm. T. Lusk, M.D., of New York, officiating, and the Report of the Committee of Arrangements presented by its Chairman, Dr. John G. Truax, was accepted and adopted.

The President's Address upon "Tubal Pregnancy," with illustrations, is an admirable paper, and worthy of most careful perusal. It was very ably discussed by Drs. Goodell, of Pennsylvania, Henry O. Marcy, of Massachusetts, and by Janvrin and Henry F. Risch, of New York County. The second special subject considered was that of "The Treatment of Hernia." The leading paper upon this subject was presented by Dr. Joseph D. Bryant, of New York City. Among other important papers presented was that on "Alcoholic Insanity," by T. D. Crothers, of Connecticut. "Fads Old and New" receive their just deserts from Dr. Didama, of Syracuse, N. Y. "The Temporary Transfixion Ligature" was the subject of a carefully prepared paper by Dr. Thomas H. Manly, of New York City. "Shadow-Lines of Insanity" is the title of an interesting article by Dr. John Shradley. Under the heads of leading questions,

the subject of hernia receives a very extended and exhaustive discussion from a number of prominent surgeons. The general address upon Medicine was presented by Dr. E. K. Dunham, of New York City, his subject being the "Bacteriological Tests of Drinking-Water."

Dr. Henry O. Marcy has an article upon "The Cure of Hæmorrhoids and the Use of Buried Animal Sutures." "Ataxic Paraplegia" is discussed by Dr. Darwin Colvin, of Wayne County, and Dr. Charles Edmund Bull has an able paper upon "Extraction of Cataract without Iridectomy."

The third general subject upon the programme is that of "The New Hypnotics." The leading paper under this head was presented by Dr. Wm. H. Flint, of New York, in which he considers the value and uses of sulphonal, amylen hydrate, hydrobromate of hyoscyne, paraldehyde and urethran; his object being "to give a summary of the therapeutic applications, the contraindications, the toxicology, the modes of administration, and in some cases the physiological action of these newer hypnotics." Dr. Wm. H. Robb, of Montgomery County, presents a valuable paper upon "Pelvic Cellulitis." "The Treatment of Acute Peritonitis by Laparotomy" is discussed by Dr. John Cronyn, of Erie County, and by others. An article upon "Diphtheria," by Dr. E. F. Marsh, of Oswego County, was read by title—giving its history, etiology, symptoms and treatment.

Our limits preclude the presentation of a full list of the papers presented or of the discussions that accompany them. The volume will be found to be a valuable accession to any library, and reflects great credit upon the work of the Association.

The Report of the Librarian, Dr. J. W. S. Gouley, states that the library of the Association now numbers 8,000 volumes, and is now placed in the same building with the Mott Memorial Library. The total fellowship of the Association, as reported at the annual meeting for 1889, was 732, and represented by five District Branches, including the entire State of New York. The growth of this organization in the brief period of six years is the best guarantee possible of its permanent success.

FAMILIAR FORMS OF NERVOUS DISEASE. By M. ALLEN STARR, M.D., PH.D. With Illustrations, Diagrams and Charts. 8vo, pp. 339. New York: William Wood & Co. 1890.

The object of this handy volume is to make known to practitioners the recent marked advances in neurological medicine, particularly in the direction of the localization of brain and spinal cord lesions with special reference to diagnosis and medical and surgical treatment. It is in no sense a text-book or systematic treatise on

diseases of the nervous system but, as set forth by the author, a systematic digest of the work in the Nervous Clinic of the New York College of Physicians and Surgeons.

The first seven chapters give a brief but very clear outline of the present knowledge of cortical function and localization, while chapter six, on aphasia and the cortical areas governing language, is particularly clear and valuable. The explicit directions for the thorough examination of patients presenting difficulties of speech from cerebral causes are worthy great attention. Chapters ten and eleven are devoted to a discussion of the localization of spinal cord disease. Chapter fourteen, on multiple neuritis, is a reproduction of the author's valuable article on this interesting and important topic in "Wood's Reference Handbook of the Medical Sciences." Chapter twenty, by Frederick Peterson, on ordinary forms of insanity, presents the subject attractively and instructively, but of necessity in the briefest manner. The importance of the early diagnosis of general paresis, upon which he dwells, is timely. His preference for private over public institutions for the treatment of acute cases, however, will be questioned in many quarters. Electro-therapeutics are treated with scant courtesy, and the static form of electricity is pithily classed with "other mild forms of counter-irritation," and aside from its mental effect relegated to the limbo of things useless.

Typographically and otherwise the book is a credit to the publishers. The cuts are clear and of material value to the context. The style is lucid and free from pedantry. It is heartily commended as furnishing the practitioner in condensed form what is latest, best and most practical in the treatment of the diseases discussed.

THE ANATOMY OF THE CENTRAL NERVOUS ORGANS IN HEALTH AND IN DISEASE. By DR. HEINRICH OBERSTEINER, Professor at the University of Vienna. Translated, with annotations and additions, by ALEX. HILL, M.D., M.R.C.S., etc. With 198 Illustrations. Pp. 432. Philadelphia: P. Blakiston, Son & Co.

A careful reading of this extremely valuable addition to the literature of anatomy, and in particular to its most complicated part, commands admiration for the thoroughness, painstaking and indefatigable labor of the author who, from a mass of material formerly scattered in periodicals, has collected, carefully weighed and herein systematically presented the best that is known on the subject. He has been very fortunate, moreover, in his translator, who has given us a book in English, and not the jargon which so frequently characterizes translations from other languages, and especially from the German. An obscure or involved sentence is sought for in vain, and a wholesome use of Saxon is very refreshing on

a subject usually buried under a pedantic nomenclature.

The work in no wise takes the place of text-books on descriptive anatomy, a knowledge of which it presupposes, but is prepared for the advanced student, practitioner and specialist. A notable feature of the book is its American-like wealth of illustration. The cuts are not only original but extremely well executed, and the plan of showing the exact appearance of sections and their schematic outline in association is productive of happy results. Were the parts named in full instead of indicated by initials they would leave nothing to be desired.

The opening section gives in a brief, practical way the various methods of examination, and is followed by skilfully arranged chapters on Morphology, Histology, Arrangement, Topography, Course and Connection of Nerve-fibres, etc. A plentiful and judicious use of face type is made, to indicate topics and sub-heads. Occasional interpolated paragraphs by the translator, himself an authority on the subject, add material value and clearness to the text. Owing to its advanced and technical character the book may meet with a limited demand, but no one who gives attention to the advances made in this branch of medical knowledge will be without it.

A TEXT-BOOK OF MENTAL DISEASES, WITH SPECIAL REFERENCE TO THE PATHOLOGICAL ASPECTS OF INSANITY. By W. BEVAN LEWIS, L.R.C.P., M.R.C.S. (Eng.), Medical Director West Riding Asylum; Lecturer on Mental Diseases at the Yorkshire College. With Illustrations in the Text, Charts, and Eighteen Lithographed Plates. Pp. xxii, 552. Philadelphia: P. Blakiston, Son & Co. 1890.

In this interesting volume the author has aimed at a full presentation of the anatomical and pathological aspects of his subject, believing that former text-books on mental diseases have been disproportionately occupied with the clinical side of insanity. The work is divided into three parts. Part I deals with the anatomy of the cord, medulla, mesencephalon, thalamencephalon, prosencephalon, the encephalon as a whole, the cerebral cortex and cortical lamination. Part II, the clinical section, discusses the states of depression, states of exaltation, fulminating psychoses, mental enfeeblement, recurrent insanity, epileptic insanity, general paralysis of the insane, alcoholic insanity, insanity at the periods of puberty and adolescence, at the puerperal and climacteric periods, and senile insanity. Part III, the pathological section, takes up the subjects of morbid conditions of the cranial bones, investing membranes, brain substance, histological elements of cortex, forms of tissue degradation, and the pathological anatomy of general paralysis, of epilepsy and of chronic alcoholism.

The anatomical and pathological sections are handsomely illustrated by numerous lithographic plates. The clinical section contains numerous tables and charts of statistics and many clinical reports of illustrative cases. The author's statistics are based upon an analysis of 4,000 cases of insanity treated at the West Riding Asylum.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, 1889.
Vol. II. Edited by DR. WILLIAM WARREN POTTER, Secretary, Buffalo, N. Y.

This, as its title indicates, is the Transactions of the second meeting of this Association. The Association is one which is bound to make itself felt in the lines of scientific obstetrics and gynecology. Its first two meetings have been pronounced successes. The present beautiful volume of Transactions contains papers read and discussed covering the whole range of obstetrics and gynecology, by the following well-known men: Rollin L. Banta, Buffalo; David Barrow, Lexington; J. Henry Carsten, Detroit; William J. Conklin, Dayton; William S. Gardner, Baltimore; Rufus B. Hall, Cincinnati; Hampton C. Hill, Saco, Me.; Joseph Hoffman, Philadelphia; Lewis S. McMurtry, Danville; E. E. Montgomery, Philadelphia; William H. Myers, Fort Wayne; William Warren Potter, Buffalo; Joseph Price, Philadelphia; Charles A. L. Reed, Cincinnati; Geo. Rohé, Baltimore; Byron Stanton, Cincinnati; William W. Seymour, Troy, N. Y.; William H. Taylor, Cincinnati; A. Vander Veer, Albany; William H. Wathen, Louisville; Wm. H. Wenning, Cincinnati; Xavier O. Werder, Pittsburgh.

THE NEUROSES OF THE GENITO-URINARY SYSTEM IN THE MALE; WITH STERILITY AND IMPOTENCE. By DR. R. ULTMANN, Professor of Genito-Urinary Diseases in the University of Vienna. Translated by GARDNER W. ALLEN, M.D., Surgeon in the Genito-Urinary Department, Boston Dispensary. Philadelphia and London: F. A. Davis, 1889.

We have in this little work the translation by Dr. Allen, of two monographs written by Prof. Ultmann, of the University of Vienna, upon two important subjects. If additional light can be thrown upon them, its value will be quickly appreciated by those who have found them difficult of diagnosis, and often intractable in management. The neurosis of the genito-urinary organs are very fully considered. Reflex influences receive especial attention. The diagnosis, prognosis and treatment of these affections will be found instructive to students and helpful in practice. The second monograph deals with sterility and impotence in the male. It is a valuable article. The volume is one of the "Ready Reference Series."

MISCELLANY.

LETTERS RECEIVED.

Dr. J. B. Payne, Hot Springs, Ark.; S. J. M. Putnam, Mendota, Wis.; Dr. S. P. Deahofe, Potsdam, O.; Dr. J. W. Keating, Ann Arbor, Mich.; Dr. C. M. Headrick, Tecumseh, Neb.; Dr. S. H. Toy, Johnson City, Tenn.; Dr. Robert Reyburn, Washington, D. C.; Clark, Forbes & Co., Miamisburgh, O.; Dr. F. J. McGarvey, Cloquet, Minn.; Dr. B. P. Anderson, Colorado Springs, Col.; Dr. J. S. Parent, Birchton, N. Y.; Dr. J. S. Coleman, Augusta, Ga.; N. Y. Post-Graduate Medical School and Hospital, New York City; Dr. M. R. Brown, Chicago; Dr. P. C. Remondino, San Diego, Cal.; Dr. G. L. Eyster, Rock Island, Ill.; Dr. W. H. Geddings, Aiken, S. C.; Dr. J. E. Chancellor, Alum Springs, Va.; Julia H. Murphy, Mercer, Pa.; Dr. N. W. Hamilton, Grafton, N. Dakota; Dr. T. D. Crothers, Hartford, Conn.; Dr. Wm. A. Campbell, Ann Arbor, Mich.; L. S. Trowbridge, Detroit, Mich.; Dr. Louis A. Kengla, San Francisco, Cal.; Fourth National Bank, Columbus, O.; Commercial National Bank, Cleveland, O.; Surgeon-General Hamilton, U. S. M. H. S., Washington, D. C.; C. L. Topliff, Dr. J. E. Jauvria, Bellevue Hospital Medical College, Merchants Exchange National Bank, New York City; American National Bank, Nashville, Tenn.; Dr. C. W. Dulles, City National Bank, Howard M. DuBois, Phila.; Dr. A. A. Deering, Boone, Ia.; G. T. Gail, Lake Villa, Ill.; Dr. J. N. Dixon, Springfield, Ill.; Dr. Henry B. Baker, Lansing, Mich.; Dr. H. W. Elmer, Bridgeton, N. J.; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. L. W. Baker, Baldwinville, Mass.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 20, 1890, to September 26, 1890.

Major Johnson V. D. Middleton, Surgeon, is relieved from duty at David's Island, New York, and will report in person to the commanding officer, Ft. Columbus, New York City, for duty at that station, relieving Major Joseph R. Gibson, Surgeon, and reporting by letter to the commanding General, Div. of the Atlantic. Major Gibson, on being relieved by Major Middleton, will report in person to the commanding officer, David's Island, New York, for duty at that station, and by letter to the Superintendent of the recruiting service. Par. 1, S. O. 219, A. G. O., Washington, September 18, 1890.

Capt. Aaron H. Appel, Asst. Surgeon U. S. A., leave of absence for seven days granted by the commanding officer, Ft. D. A. Russell, is extended twenty-three days. Par. 3, S. O. 70, Dept. of the Platte, September 17, 1890.

Capt. C. B. Ewing, Asst. Surgeon, is granted leave of absence for one month, to take effect the 1st prox. Par. 5, S. O. 131, Dept. of the Missouri, September 22, 1890.

Under the provisions of General Order 43, c. s., Hdqrs. of the Army, Adjutant General's Office, the post of Little Rock Bks., Ark., will be abandoned, to take effect not later than October 1, 1890. Capt. Paul R. Brown, Asst. Surgeon, will accompany Company E to Ft. Supply, Indian Ter., and there take station until further orders. G. O. 15, Hdqrs. Dept. of the Missouri, St. Louis, Mo., Aug. 11, 1890.

Major J. P. Kimball, Surgeon, in view of the early abandonment of Ft. Elliott, Tex., to which post he is at present assigned for station, is relieved from duty at that post, and will, upon the expiration of his present sick leave of absence, proceed to Ft. Supply, Ind. Ter., and report to the commanding officer for duty. Par. 2, S. O. 132, Dept. of the Missouri, September 24, 1890.

THE
Journal of the American Medical Association.

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PUBLISHED WEEKLY.

VOL. XV.

CHICAGO, OCTOBER 11, 1890.

No. 15.

ORIGINAL ARTICLES.

THE SURGICAL TREATMENT OF CROUP.

Read in the Section of Laryngology and Otology, at the Fort-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY F. E. WAXHAM, M.D.,

PROFESSOR OF LARYNGOLOGY AND RHINOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO; PROFESSOR OF LARYNGOLOGY AND RHINOLOGY IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL OF CHICAGO.

When medical treatment has been thoroughly tested and it is evident that the patient must die from asphyxia unless relieved, then we must meet the emergency by surgical measures.

A nice question of judgment often arises as to the proper time for interfering surgically. When shall we abandon all hope of saving the patient by medical means, and when shall we know that the child will perish unless given prompt relief? In answer to these queries I would say that when the voice becomes whispering, when the cough becomes suppressed, when in addition the dyspnoea becomes urgent, and the loud stridor heard both on inspiration and expiration, and when there is marked recession at the base of the sternum and above the clavicles—when all these symptoms are present and continuous, and not relieved by the use of emetics, it is certainly time to operate.

I do not advise and do not practice early operations. Operations performed early, with the first symptoms of laryngeal invasion, should not be sanctioned, as many will recover under medical treatment. Operative measures, on the other hand, should not be postponed until the patient becomes moribund, for while many will recover even under these circumstances, yet their chances for recovery are far less than when the operation is performed earlier.

We should endeavor to strike a happy medium between the two extremes and bear in mind the indications for surgical interference. Having determined that an operation is imperative, the next question to decide is the choice of operation. Shall we choose the time-honored operation of tracheotomy or the more recent operation of intubation of the larynx?

The latter operation requires far more skill and delicacy of *technique*, and is an operation limited

to those especially qualified. In the hands of those so qualified it gives results that cannot be attained by the older operation. It is an operation that I would unhesitatingly recommend in preference to tracheotomy at all ages, under all conditions, and under all circumstances. In support of this statement I would fully record two hundred and eighty-five cases with one hundred recoveries, or 35 per cent. These cases have ranged from 5 months to 20 years in age, and from mild diphtheritic forms to the most malignant. All have been operated upon in private practice, and the majority of them in poor and destitute families where tracheotomy would scarcely have been undertaken. If any one claims the superiority of tracheotomy over intubation under these circumstances I would challenge them to record their cases. Tracheotomy in hospital practice, where patients can have every care and attention, or when performed upon selected cases and upon the older patients, will give fair results; but when performed as intubation is, upon young babies, upon bad diphtheritic cases at all ages and among all classes, the results will be disheartening.

My first 150 cases were duly recorded in THE JOURNAL; the remaining cases coming under my care I desire to record at the present time.

It is often said that intubation is performed early and unnecessarily, and that if tracheotomy were performed under the same circumstances the results would be equally brilliant. This is a mistaken idea and I desire to refute it. By the record of these cases it will be seen that nearly all were in the practice of other physicians and I have been called as a last resort, after all other measures had been exhausted, and when it became evident that the patient must die unless relieved. Not infrequently the operation is so long delayed that the patient is dead upon my arrival, and too frequently they are found unconscious, pulseless and comatose. A few of these cases have been so remarkable as to be worthy of special mention.

Case 181.—This patient was not only greatly exhausted from the disease, but also by previous attempts at intubation which had been unsuccessful. Upon arriving, the patient was found unconscious, pulseless at the wrist and upon the very verge of suffocation. A tube was quickly

introduced and artificial respiration performed. The child soon revived, wore the tube four days and made a perfect recovery.

Case 191 was another that was pulseless and unconscious and required artificial respiration, but is living and well to-day. Drs. Kippax, Guerin and Jacques were present at the operation and will verify this report.

Case 226.—Upon arriving I was informed by Dr. Case, the attending physician, that it was *too late*, the boy was dying. The sphincters had relaxed, the eyes were rolled upward, he was livid, unconscious and pulseless, and within five minutes undoubtedly would have been dead. With the remark that we would give him a chance for life, a tube was quickly introduced and artificial respiration performed. He fully revived and wore the tube three days, when it was ejected. The dyspnoea returned and it became necessary to reintroduce it. In four days it was removed and the child made a perfect recovery.

Case 254.—This was a case in which the constitutional symptoms were very severe and the diphtheritic membrane not only covered the whole pharynx but also invaded the larynx, trachea and bronchial tubes. Upon introducing the tube, membrane was pushed down in front of it. It was immediately withdrawn, when a long strip of membrane was ejected. The tube was reintroduced. Two days later there was evidence of membrane below the tube; it was removed and a membranous cast of the trachea ejected. On the seventh day after the operation the patient was able to do without the tube. The respiration, although easy, was rapid on account of the extension of the membrane to the bronchial tubes. The child was very much prostrated from the very beginning of the disease, and the heart's action was feeble and rapid; she was tided along, however, from day to day with an abundance of nourishment, stimulants, digitalis, strychnia and ammonia. Gangrene occurred in the toes of both feet, they becoming cold and black. Gangrenous spots were also seen upon the legs between the knees and the feet. Although the respiration became natural the circulation became more rapid and feeble, and the child died ten days after the tube was removed.

Case 252.—In this case the pharyngeal symptoms were mild, no membrane being visible in the pharynx, but the child was dying from suffocation due to laryngeal obstruction. The tube was introduced, giving prompt relief. Two days later it was evident that membrane was present below the tube, and when it was removed a partial cast of the trachea was expelled. As the respiration was still greatly impeded, the tube was reintroduced. Two days after this it again became evident that there was partially detached membrane below the tube. It was also evident that membrane had extended into the finer bron-

chi. The tube was removed and this membranous cast was ejected, which you will observe is a cast of the whole trachea and the two larger bronchial tubes. The patient was now able to breathe comfortably, and made a perfect recovery.

Case 257.—This patient was a baby only 15 months of age, a child of the poorest of Italians. The small room occupied was so filthy and crowded that tracheotomy never would have been considered for a moment. The baby was dying of suffocation when the operation was performed. The tube was coughed out on the second day and it became necessary to reintroduce it. On the fourth day it was removed and the child recovered.

Case 259.—This patient was a little girl 6 years old. The surroundings were even more wretched than in the previous case. The furniture of the room consisted of two old chairs, a rickety table, a small round stove and a sporting bull-dog. Everything was filthy in the extreme. The child was found to be suffering from a semi-malignant form of diphtheria. The nasal cavities were invaded, the pharynx covered with diphtheritic membrane, while the difficult respiration indicated that the larynx was invaded. The odor from the decomposing membrane in the throat was most offensive. The throat had been torn, bruised and lacerated by previous unsuccessful attempts at intubation, and the child's condition seemed most deplorable—so much so that one of the physicians present stated, with some vehemence, that if this patient recovered there was a *God in heaven and antiseptic surgery a delusion*. A tube was quickly introduced, which was coughed out on the fourth day, and perfect recovery followed. This case seemed miraculous to all who witnessed it.

These cases are only a few out of many of the same character, but sufficient, I hope, to prove to you that the operation is not performed early, unnecessarily or upon selected cases.

In Regard to After-Treatment.—The same line of treatment that has been instituted before the operation should be continued just as faithfully afterwards. In case the pharyngeal symptoms are severe and the nasal cavities invaded, antiseptic washes and frequent doses of iron are indicated. Where the pharyngeal symptoms are mild and the disease manifested principally in the larynx, with a tendency to extension downward, the bichloride of mercury should be vigorously employed. During the past two years, in those cases where the treatment has been noted, the following results have been obtained: In ninety-nine cases where the bichloride of mercury was administered there were fifty recoveries, or 50.5 per cent. In twenty-six cases where it was not administered there were nine recoveries, or 34.61 per cent.

Care of Patient.—The success attending the treatment of croup by intubation will depend, first, upon the delicacy and skill with which the operation is performed; and second, upon the care

TABLE OF CASES.

Case.	Age.	Date.	Consultation with.	Termination.	Cause of Death.	Tube Worn.	Time of death after op't'n	Diphtheritic Symptoms.
		1888						
151	18 mos.	March 30.	Dr. Steele.	Fatal . .	Extension to bronchi.	36 hours.	36 hours.	Severe.
152	4 1/4 years.	" 31.	Dr. Scudder.	" . .	Detachment of membrane.	2 days.	2 days.	"
153	2 1/4 years.	" 31.	Dr. Colwell.	" . .	Extension to bronchi.	2 days.	2 days.	Very severe.
154	18 mos.	April 5.	Dr. C. C. Sperry.	" . .	" . .	2 days.	2 days.	Severe.
155	18 mos.	" 13.	Dr. Abel.	" . .	" . .	36 hours.	36 hours.	"
156	5 1/4 years.	" 13.	Dr. B. D. Foster.	Recovery	" . .	6 days.	" . .	Very severe.
157	18 mos.	" 14.	Drs. Guerin and Quine.	Fatal . .	Detachment of membrane.	12 hours.	12 hours.	Severe.
158	15 mos.	" 19.	Dr. E. E. Babcock.	" . .	Extension to bronchi.	2 days.	2 days.	"
159	3 years.	May 13.	Dr. Harris.	Recovery	" . .	3 days.	" . .	Well marked.
160	5 years.	June 2.	Dr. Charles R. Caldwell.	" . .	" . .	4 days.	" . .	Severe.
161	18 mos.	October 15.	Dr. Murdoch.	" . .	" . .	4 days.	" . .	Well marked.
162	4 years.	" 18.	Dr. Simons.	" . .	" . .	4 days.	" . .	Severe.
163	4 years.	" 25.	Own practice.	Fatal . .	Extension to bronchi.	3 days.	3 days.	Well marked.
164	6 years.	" 28.	Dr. Jacobs.	Recovery	" . .	3 days.	" . .	"
165	6 years.	Nov. 1.	Own practice.	" . .	" . .	2 days.	" . .	Severe.
166	2 years.	" 4.	" . .	Fatal . .	Sudden suffocation after ejection of tube.	2 days.	2 days.	"
167	3 years.	" 12.	Dr. E. E. Babcock.	" . .	Extension of membrane.	3 days.	3 days.	"
168	1 year.	" 13.	Dr. Burr.	" . .	Obstruction below tube.	1 day.	1 day.	"
169	4 years.	" 14.	Dr. Beery.	Recovery	" . .	4 days.	" . .	"
170	7 years.	" 15.	Dr. Tillotson.	Fatal . .	Exhaustion.	2 days.	3 days.	Malignant.
171	1 year.	" 25.	Dr. Stout.	" . .	Extension to bronchi.	2 days.	2 days.	Severe.
172	7 years.	" 27.	Dr. O'Malley.	Recovery	" . .	4 days.	" . .	Semi-malignant
173	18 mos.	" 30.	Drs. Jacques and Steele.	" . .	" . .	2 days.	" . .	Mild.
174	4 years.	Dec. 2.	Dr. C. E. Caldwell.	" . .	" . .	5 days.	" . .	Severe.
175	4 years.	" 3.	Dr. G. W. Webster.	" . .	" . .	5 days.	" . .	Semi-malignant
176	4 years.	" 11.	Dr. Jacobs.	Fatal . .	Extension to bronchi.	6 days.	6 days.	Severe.
177	4 years.	" 16.	Dr. Giljohann.	Recovery	" . .	4 days.	" . .	"
178	12 years.	" 20.	Drs. Rockwell and Gee.	Fatal . .	Detachment of memb. below tube.	2 days.	2 days.	"
179	4 years.	" 25.	Dr. Miller.	" . .	Exhaustion.	7 days.	7 days.	Very severe.
180	4 years.	" 25.	Drs. Banga and Broell.	" . .	Detachment of memb. below tube.	24 hours.	24 hours.	Severe.
		1889						
181	8 years.	January 1.	Dr. Jacques.	Recovery	" . .	4 days.	" . .	"
182	6 years.	" 2.	Dr. Church.	" . .	" . .	4 days.	" . .	"
183	18 mos.	" 5.	Dr. A. L. Thomas.	Fatal . .	Extension of membrane.	2 days.	2 days.	"
184	17 mos.	" 10.	Dr. Porsons.	" . .	Exhaustion.	12 hours.	12 hours.	Malignant.
185	2 1/4 yrs.	" 14.	Dr. Harry L. Thomas.	" . .	Extension of membrane.	24 hours.	24 hours.	Severe.
186	15 mos.	" 18.	Dr. Miller.	Recovery	" . .	3 days.	" . .	"
187	5 years.	" 24.	Dr. Barrows.	" . .	" . .	4 days.	" . .	"
188	2 1/4 yrs.	" 27.	Dr. Whidden.	" . .	" . .	4 days.	" . .	"
189	3 1/4 yrs.	Feb'y 17.	Dr. Giljohann.	Fatal . .	Extension of membrane.	3 days.	3 days.	"
190	4 years.	" 19.	Dr. Abel.	" . .	Exhaustion.	4 days.	8 days.	"
191	7 years.	March 11.	Dr. Kippax.	Recovery	" . .	12 hours.	" . .	"
192	5 years.	" 14.	Dr. Simons.	Fatal . .	Exhaustion.	24 hours.	24 hours.	Malignant.
193	4 years.	" 18.	Dr. Beery.	Recovery	" . .	3 days.	" . .	Severe.
194	7 years.	" 19.	Drs. Steele and Babcock.	" . .	" . .	2 days.	" . .	"
195	7 years.	" 25.	Dr. Steele.	Fatal . .	Exhaustion.	5 days.	5 1/2 days.	"
196	4 years.	" 26.	Dr. Jacobs.	" . .	Extension of membrane.	3 days.	3 days.	"
197	6 mos.	April 2.	Dr. Whitman.	" . .	" . .	24 hours.	24 hours.	"
198	8 years.	" 8.	Drs. Mitchel and Gatchel.	" . .	Exhaustion.	24 hours.	24 hours.	Malignant.
199	4 years.	" 10.	Dr. Stowell.	" . .	Extension of membrane.	2 days.	2 days.	Severe.
200	4 years.	" 14.	Dr. Hall.	" . .	" . .	7 days.	13 days.	"
201	4 years.	" 16.	Dr. Jacobs.	" . .	Detachment of membrane.	4 days.	4 days.	"
202	2 1/4 yrs.	" 20.	Dr. Streeter.	" . .	Extension of membrane.	2 days.	2 days.	"
203	4 years.	" 29.	Dr. Streeter.	" . .	Exhaustion.	3 days.	10 days.	Semi-malignant
204	3 years.	May 1.	Dr. Merowitz.	Recovery	" . .	3 days.	" . .	Severe.
205	4 years.	" 6.	Dr. C. E. Caldwell.	" . .	" . .	3 days.	" . .	"
206	3 1/4 yrs.	" 14.	Dr. Kewley.	Fatal . .	Detachment of membrane.	24 hours.	24 hours.	"
207	3 years.	" 27.	Drs. Nelson and Bosworth.	Recovery	" . .	4 days.	" . .	"
208	2 1/4 yrs.	" 28.	Dr. Stroe.	Fatal . .	Extension of membrane.	24 hours.	24 hours.	"
209	4 years.	June 1.	Dr. McArthur.	Recovery	" . .	5 days.	" . .	"
210	5 years.	" 9.	Dr. Steele.	Fatal . .	Measles.	2 days.	2 days.	"
211	4 years.	" 10.	Dr. Brill.	Recovery	" . .	9 days.	" . .	"
212	5 years.	" 15.	Dr. Brinkerhoff.	" . .	" . .	5 days.	" . .	"
213	4 years.	" 20.	Dr. Winrow.	Fatal . .	Extension of membrane.	4 days.	4 days.	"
214	17 mos.	July 31.	Dr. Brill.	Recovery	" . .	5 days.	" . .	"
215	18 mos.	August 2.	Dr. Mercer.	Fatal . .	Extension of membrane.	2 days.	2 days.	"
216	4 years.	" 16.	Dr. Rutherford.	" . .	Exhaustion.	9 days.	9 days.	"
217	8 years.	" 21.	Dr. Eskridge.	" . .	" . .	36 hours.	36 hours.	Malignant.
218	3 years.	Sept. 2.	Dr. Rutherford.	" . .	Extension of membrane.	36 hours.	36 hours.	Severe.
219	3 years.	" 18.	Dr. J. G. Berry.	Recovery	" . .	4 days.	" . .	"
220	4 years.	Oct. 4.	Dr. Willard.	Fatal . .	Detachment of membrane.	3 days.	3 days.	"
221	18 mos.	" 4.	Dr. Pyncheon.	" . .	Exhaustion.	36 hours.	36 hours.	"
222	2 1/4 yrs.	" 6.	Own practice.	Recovery	" . .	5 days.	" . .	Mild.
223	5 years.	" 7.	Dr. Whitman.	Fatal . .	Extension of membrane.	3 days.	3 days.	Severe.
224	5 years.	" 9.	Drs. Sullivan and Berry.	Recovery	" . .	5 days.	" . .	Well marked.
225	2 1/4 yrs.	" 9.	Dr. Egan.	Fatal . .	Extension of membrane.	2 days.	2 days.	Severe.
226	4 years.	" 10.	Dr. Case.	Recovery	" . .	6 days.	" . .	"
227	3 years.	" 12.	Dr. E. R. Bennet.	" . .	" . .	3 days.	" . .	"
228	18 mos.	" 14.	Dr. Hall.	Fatal . .	Extension of membrane.	2 days.	2 days.	"
229	6 mos.	" 18.	Dr. Rutherford.	Recovery	" . .	4 days.	" . .	"
230	3 years.	" 21.	Dr. E. R. Bennett.	Fatal . .	Unknown.	24 hours.	24 hours.	"
231	9 years.	" 27.	Dr. Gee.	" . .	Extension of membrane.	2 days.	2 days.	"
232	3 years.	" 30.	Bosworth and Creighton.	" . .	" . .	2 days.	2 days.	"
233	3 1/2 yrs.	Nov. 3.	Dr. J. Bell.	Recovery	" . .	4 days.	" . .	"
234	5 years.	" 5.	Dr. C. G. Davis.	Fatal . .	Extension of membrane.	2 days.	2 days.	"
235	6 1/2 yrs.	" 6.	Dr. Whitnall.	" . .	" . .	4 days.	4 days.	"
236	3 years.	" 8.	Dr. Leavett.	" . .	Detachment of membrane.	2 days.	2 days.	"
237	7 years.	" 10.	Dr. Goodall.	" . .	Extension of membrane.	2 days.	2 days.	"
238	4 years.	" 13.	Dr. J. G. Berry.	" . .	" . .	2 days.	2 days.	"
239	4 years.	" 14.	Dr. McGaughey.	" . .	" . .	2 days.	2 days.	"
240	5 years.	" 19.	Dr. Harris.	" . .	Pneumonia.	36 hours.	36 hours.	"
241	13 mos.	" 20.	Dr. Roberts, of Lemont.	" . .	Extension of membrane.	36 hours.	36 hours.	"

TABLE OF CASES—CONTINUED.

Case.	Age.	Date.	Consultation with.	Termination.	Cause of Death.	Tube Worn.	Time of death after opt'n	Diphtheritic Symptoms.
242	3 years.	Nov. 28.	Own practice	Recovery		8 days.		Severe.
243	3 years.	Dec. 3.	Dr. Creighton	"		4 days.		"
244	5 years.	" 4.	Greenfield, W. C. Caldwell	"		9 days.		"
245	2½ yrs.	" 11.	Dr. Champlin	Fatal	Extension of membrane.	36 hours.	36 hours.	"
246	2 years.	" 30.	Dr. Butler	"	"	2 days.	2 days.	"
247	10 years.	" 30.	Dr. Waldemeyer	Recovery	"	4 days.		"
248	4 years.	1890						
249	3 years.	January 5.	Dr. Wing	Fatal	Exhaustion	36 hours.	2½ days.	"
250	3 years.	" 6.	Dr. Taylor	"	Extension of membrane.	36 hours.	36 hours.	"
251	9 years.	" 6.	Dr. Dahlburg	"	"	48 hours.	48 hours.	"
252	9 years.	" 16.	Dr. Daugherty	"	Pneumonia	3 days.	3 days.	"
253	4 years.	" 16.	Dr. Harris	Recovery	"	4 days.		"
254	6 years.	" 26.	Dr. R. G. Collins	Fatal	Uræmic convulsions	3 days.	3 days.	Very severe.
255	4 years.	" 30.	Dr. A. S. Thomas	"	Gangrene of foot	7 days.	14 days.	Malignant.
256	4 years.	" 27.	Dr. Bacon (Englewood)	"	Exhaustion	2 days.	2 days.	Very severe.
257	15 mos.	" 30.	Dr. Greenfield	"	Unknown	2 days.	2 days.	Severe.
258	3 years.	Feb'y 2.	Dr. Volini	Recovery	"	4 days.		Well marked.
259	3 years.	" 8.	Dr. Steele	"	"	5 days.		Very severe.
260	6 years.	" 11.	Drs. Bates and Church	"	"	4 days.		"
261	2 years.	" 20.	Dr. Riley	Fatal	Exhaustion	2 days.	2 days.	"
262	7 years.	" 21.	Dr. Byrne	Recovery	"	7 days.		Severe.
263	18 mos.	" 24.	Dr. Flood	"	"	4 days.		"
264	6 years.	" 25.	Dr. Quine	Fatal	Extension of membrane.	24 hours.	24 hours.	Very severe.
265	7 years.	" 25.	Dr. Flood	"	"	3 days.	3 days.	Severe.
266	3 years.	" 25.	Drs. Earle and Herrick	Recovery	"	21 days.		Well marked.
267	11 mos.	March 1.	Dr. P. S. Hayes	"	"	6 days.		Severe.
268	13 mos.	" 6.	Dr. C. E. Caldwell	Fatal	Extension of membrane.	48 hours.	48 hours.	"
269	3 years.	" 15.	Dr. Simons	"	Detachment of membrane	48 hours.	48 hours.	"
270	3 years.	" 16.	Dr. Parsons	"	Extension of membrane.	12 hours.	12 hours.	"
271	3 years.	" 18.	Dr. Earle	Recovery	"	4 days.	4 days.	"
272	2 years.	" 19.	Dr. McWilliams	"	"	3 weeks.		Well marked.
273	5 years.	" 27.	Drs. Shepherd and Jones	"	"	5 days.		Severe.
274	7 years.	" 27.	Drs. Shepherd and Jones	"	"	4 days.		"
275	20 years.	April 2.	Dr. Banga	"	"	4 days.		Well marked.
276	2½ yrs.	" 7.	Dr. Rockwell	Fatal	Exhaustion	36 hours.	36 hours.	Malignant.
277	7 years.	" 10.	Dr. Froom	Recovery	"	3 days.		Well marked.
278	10 mos.	" 11.	Dr. Kewley	Fatal	Extension of membrane.	24 hours.	24 hours.	Malignant.
279	4 years.	" 13.	Dr. Casely	Recovery	"	2 days.		Well marked.
280	1 year.	" 15.	Dr. Coy	"	"	5 days.		Severe.
281	5 mos.	" 18.	Dr. Creighton	Fatal	Exhaustion	2 days.	2 days.	"
282	4 years.	" 22.	Drs. Earle and Herrick	"	"	10 hours.	10 hours.	Well marked.
283	2 years.	" 28.	Dr. James Bell	"	Extension of membrane.	2 days.	2 days.	Severe.
284	5 years.	" 29.	Drs. Earle and Fitch	Recovery	"	5 days.		Very severe.
285	5 years.	May 1.	Dr. Fitzpatrick	Fatal	Detachment of membrane	12 hours.	12 hours.	Severe.
286	5 years.	" 3.	Dr. Schmidt	Recovery	"	2 weeks.		"

SUMMARY.

One hundred and fifty cases previously reported, with forty-one recoveries, or 27.33 per cent.

Present report of one hundred and thirty-five cases, with fifty-nine recoveries, or 43.70 per cent.

Total, 285 cases, with 100 recoveries, or 35 per cent.

The ages have been as follows:

Under 1 year,	10 cases with	3 recoveries,	or 30	per cent.
Between 1 and 2 years, 37	" 9	" 24.32	"	"
" 2 and 3 years, 46	" 10	" 21.76	"	"
" 3 and 4 years, 47	" 17	" 36.17	"	"
" 4 and 5 years, 59	" 23	" 38.98	"	"
" 5 and 6 years, 27	" 14	" 51.85	"	"
" 6 and 7 years, 18	" 7	" 38.88	"	"
" 7 and 8 years, 20	" 9	" 45.00	"	"
" 8 and 9 years, 7	" 4	" 57.14	"	"
" 9 and 10 years, 6	" 3	" 50.00	"	"
" 10 and 11 years, 3	" 1	" 33.33	"	"
At 12 years, 2	" 0	" 00.00	"	"
At 13 years, 1	" 0	" 00.00	"	"
At 14 years, 1	" 0	" 00.00	"	"
At 20 years, 1	" 0	" 00.00	"	"

285 cases, 100 recoveries, or 35.00 per cent.

There were ten cases under the age of one year; of these, one was five months old, one six months, four were nine months, two ten months, and two eleven months of age. Among those to recover after the operation were two nine months old and one of ten months.

There were 93 cases under three years of age, with 22 recoveries, or 23.65 per cent.

There were 193 cases over the age of three years, with 78 recoveries, or 40.62 per cent.

and judgment exercised in the subsequent management of the case. One of the greatest dangers following intubation is from detachment of membrane below the tube. When the tube is introduced, if membrane is pushed down in front of it and there is evident obstruction, it should be

removed at once. The expulsive cough that follows will expel the membrane. One must exercise the greatest judgment in the selection of the proper tube. A tightly fitting tube that could not be expelled when membrane became detached below it, has been the cause of many a death. There are always indications of membrane below the tube, and one should be constantly on the alert and anticipate the dangers that constantly threaten. A peculiar hoarseness to the cough, and sometimes a flapping sound as the membrane is forced up against the bottom of the tube, are indications that should never be unheeded. Under these circumstances the tube should at once be removed, and the expulsive cough following will in the great majority of cases expel the membrane. Some advocate performing intubation first and tracheotomy later if necessary. This will rarely be required if these indications are duly appreciated and properly met. In this manner complete casts of the whole trachea, and often of the larger bronchi, can be secured just as effectively as by a tracheotomy, and with much less danger to the patient.

We cannot consider the surgical treatment of croup without reference to tracheotomy. It is an operation that will always have a place in the

treatment of this disease. Intubation is an operation requiring so much delicacy and skill that its employment will be limited to those specially favored. Those who have not had special training or who are not unusually dextrous should never attempt intubation, but should resort to the older operation.

While there are some who have but little faith in tracheotomy and who question its utility, yet statistics prove conclusively its value as a life-saving operation. Recoveries from tracheotomy amount to about 26 per cent. In 1886 it was my pleasure to collect reports of 306 cases operated upon in Chicago with 58 recoveries, or 18.95 per cent. Agnew¹ (1878) reports 11,696 cases with recoveries amounting to 26.25 per cent.

Monti¹ (1884, Vienna) 12,736 cases with 26.8 per cent. of recoveries. Lovett¹ and Monroe, 21,853 cases performed in various parts of the world, with 28 per cent., while Mastin¹ has collected reports of 862 cases operated upon in the United States with recoveries amounting to 26 per cent.

It must be admitted, however, that individual operators often present a much larger percentage of recoveries. On the other hand, some meet with almost uniform failure, and their cases are never reported. Thus it has come to my knowledge that one operator has performed tracheotomy one hundred times with but one recovery, another fifty times with two recoveries, another twenty with one, another fourteen with none, and another eight with none, making a total of 212 cases with but four recoveries, or 1.88 per cent.

In operating the slow method is to be preferred when there is sufficient time; the tissues being carefully dissected and blood-vessels avoided or ligated. After the trachea has been opened all loosened membrane should be removed before the tracheotomy tube is inserted. The wound should be frequently dressed with antiseptics, and a pad of antiseptic gauze constantly worn over the tracheotomy tube. Feathers and brushes should not be introduced into the trachea, as is too frequently done. As little irritation should be produced as possible, and for the purpose of dissolving the sticky secretions that collect in the trachea and for exciting coughing by which to cause their expulsion, a warm alkaline solution should be employed instead, either by an atomizer or by pouring it directly into the tube. In case membrane is present below the tube, papyotin, tripsin or a saturated solution of pepsin may be employed for the purpose of dissolving it. The tube should be removed and cleansed as required, and it should be remembered that unremitting care and attention is the price of success.

REPORT OF A CASE OF LEFT LATERAL HOMONYMOUS HEMIANOPSIA WITH A WOUND IN THE OCCIPITO-PARIETAL REGION.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY ROBERT TILLEY, M.D.,

OF CHICAGO, ILL.

Cases of well-defined lateral homonymous hemianopsia must ever, in the nature of things, be rare; and such phenomena arising from a wound and uncomplicated with other symptoms, must, if possible, be still rarer. Of course, the impossibility in this case of demonstrating the actual abnormal state of the involved part of the brain detracts from its interest; but there are several questions which arise in connection with such a case which may be profitably passed in review. I will first report the case:

W. S., male, 21 years of age, came to the clinic at St. Luke's Hospital, Chicago; he had previously been to another institution in the city, but, as he was complaining of a noise in the ears, he was referred to the ear department and no observation seems to have been made of the eyes. He still complained of a noise in the head on the left side, but he complained also of the loss of the left half of vision of the left eye. He assured me that the right eye was "all right." I was examining, when I first saw him, the patients before some students of the Chicago Medical College, and after making a rough finger test of the field of vision of the left eye, and finding his statement relative to the loss of the left half of the left eye correct, I accepted his statement relative to the right eye, and discussed with the students the possible conditions which might bring about such a phenomenon; at the same time remarking that it seemed impossible for any pathological condition of the optic nerve or chiasm to produce such a clear cut vertical hemianopsia of one eye. The fundus was examined and nothing abnormal was found; no optic neuritis, no detachment, no atrophy, no choroiditis. The pupil was a little larger than its fellow on the right. No definite conclusion was reached that day as to the cause of the difficulty. On examining him next day with the perimeter, the observation was extended to the right eye and the patient was astonished to find that his right eye was affected in an exactly similar way. Whilst previously traces of syphilitic infection were vigorously sought for without result, attention was now immediately directed to the posterior part of the head. The following history was then obtained, in part from the patient and in part from his mother: at the close of January, or the early part of February, he was, when the worse for liquor, struck on the back of the head with a tin pail; he walked about a block to his home after receiving the

SOFT-HANDED SONS OF TOIL.—This is the classification of our craftsmen according to Dr. Holmes.

¹ Cyclopaedia of Diseases of Children, Vol. II.

blow and when within a few steps of the door was found senseless several hours after the blow was inflicted. The mother reports that he was not fully conscious till nine or ten days after the injury; that the doctor called in said that the injury on the head was a scalp wound but that the skull might be injured beneath. No sutures were used for the wound.

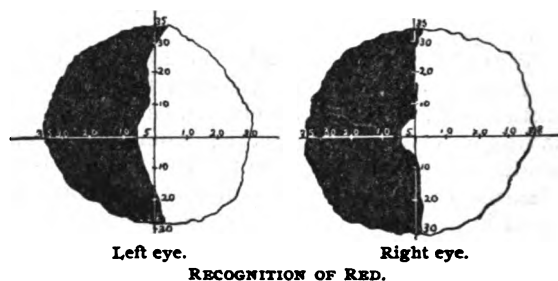
There was no paralysis of any kind, no difficulty of speech, nothing abnormal noticed about sensations. The one thing that the mother noticed was that while in bed he seemed to reach out for things as though he could not see; after he was up he was constantly mistaking his way by going into one room when he intended to go into another. Questioned relative to the size of the left pupil, the mother and patient report that they have for several years previously noticed that the left pupil was at times larger than the right and that he had experienced and spoken of the noise in the left side of the head several years prior to the wound on the head.

Examination of the eyes showed the external appearance normal in every respect, except that the left pupil was larger than the right, movements of eyeball normal, pupillary reflexes normal, the left pupil a little sluggish, convergence normal. Accommodation good and binocular vision, as shown by stereoscope, good. V. R. E. $\frac{5}{8}$, 0.5 easily, L. E. $\frac{7}{8}$, 0.5 but has to focus a little nearer, he does not, however, accept minus lenses. He can read readily without inconvenience.

Ophthalmic examination.—The only abnormal condition in the fundus was a slight choroidal crescent in the infero-external segment of the O. D. more marked in the left than in the right eye. There was no optic neuritis in either eye. I looked on several occasions for this on account of the effort made by Drs. Edmonds and Lawford to explain the existence of optic neuritis in the various cerebral affections.¹

V. F.—The observations were made with a small shaded electric lamp in a dark room for the sensation of light, with the finger, and for the color red with the perimeter. The clearness and accuracy with which he recognized in the region to be indicated both the finger and the red object, and the total lack of evidence that he had any conception of its presence before that point, showed that the case was one of a well defined homonymous hemianopsia, the line of vision being practically vertical except in the immediate region of the point of fixation. The exhibition to you of the actual chart taken with a Steven's registering perimeter, will give you a more accurate idea of the field than any words can. It is illustrated by the diagram Fig 1. You see that the line is nearly vertical except about the fix-

tion point, where it extends gradually to about five degrees to the left of the median line. Several charts were taken at different intervals but they varied very slightly, the variations being rather in the periphery than in the central line.



To demonstrate the action of the iris a light was brought into the dark part of the field of vision, a dark card was placed vertically in front of the eye, so as to cover as accurately as possible the half of the pupil through which the left half of the retina received its light, and a small electric lamp suddenly illuminated, and the irides were always seen to contract on the appearance of the light. It was thus apparently demonstrated that the existing lesion was situated not in the optic tract but in the cortical region; and, as it involved the left half of the field of vision, the lesion should be found in the right cerebral hemisphere. The external wound on the head was located four inches and a half forward from the occipital protuberance, and the center of the wound was five-eighths of an inch to the right of the median line. The demonstrations were made in the presence of Dr. J. E. Owens, Senior Surgeon of St. Luke's Hospital, the internes, and some students. The patient was also seen by Drs. S. J. Jones and Moyer, and the whole examination was repeated in the presence of Dr. Church, of Chicago, Sunday, May 10. There existed no other manifest lesion. No difficulty in walking, no hyperæsthesia or anæsthesia. The only record of temperature that I have is 97.4° on March 27, and I regret that I have not repeated the observation.

At the latter part of March the question of operative measures for relief was suggested to the patient and his mother. After reflection he said: "I can now attend to my work, I can dance and play baseball—preferably at first base—and I will be satisfied with that."

I should add that although there was no syphilitic history, I kept him for a few weeks under mercurial treatment, and to my astonishment the previous existing difference in the pupils disappeared, so that I have not been able to observe it for about three weeks. There is, however, no difference in the general field of vision. The noise on the left side of the head referred to in the ears, is not so troublesome to him. There was nothing visible in the ear that would seem

¹ See Transactions Ophthalmological Society, Great Britain and Ireland, Vol. vii, 1887.

to account for the existence of the noise; and it must not be forgotten that it existed before the wound and before the hemianopsia.

The patient claims to have been previously troubled with a tape worm. I simply mention this in order to put before you all the possible factors which may enter into the phenomenon. It is not impossible that the difficulty may be caused by the presence of a cysticercus located in the right cuneus. As the hemianopsia came on, however, suddenly, it is very improbable. It must, however, be remembered that the patient was not himself aware of the presence of the difficulty in the right eye until it was demonstrated to him.

The question arises here: Is the phenomenon associated with the external wound found on the head? There is nothing suspicious about the wound itself. The scalp is freely movable over the bone. There is no tenderness on pressure or when percussed. The region of the wound is a little—say about half an inch—anterior to the commencement of the occipital lobe; it is located a little—five-eighths of an inch—to the right, favoring the theory of an injury to the right rather than the left cuneus, which is just what we should expect to establish the theory. That the lesion is not in the optic tract is probably proven by the pupillary reflex when the light is thrown upon the pupil from the blind half of the field of vision with the functional half protected with a dark card.

Supposing it to be proven, as far as any case can be proven under the circumstances, that the lesion is in the accepted cortical area for vision—the cuneus—is it caused by a depression of the inner plate of the skull or by an extravasation of blood? What is the best advice to give relative to operative measures? In expressing your judgment on this point, as I trust you will, let me ask you not to forget the relation of the longitudinal sinus to the cuneus and the possibility of getting along in life fairly well, especially when the loss of vision is on the left side. As the patient said, he could follow his work, play baseball and dance.

If it was thought wise to recommend an operation, the question of the time that had elapsed since the accident would necessarily cut some figure; but how much? In a consultation with Dr. J. E. Owens about two months after the receipt of wound an operation was recommended, in the expectation that the difficulty arose from a depression in the inner plate of the skull in the region of the cuneus, and that its elevation would result in a restoration of the lost vision.

With your indulgence, I will supplement this contribution with a few notes taken from a case in some respects very similar—in some respects very different—but the final result being as nearly alike as it is possible for two cases to be. The case that I refer to was published before the cortical centers had received such attention as they

now have, and the exact location of the injury is not as clearly indicated as it would be in any report of to-day. It was published in the *Irish Hospital Gazette*, Dublin, 1873:

Case of Compound Depressed Fracture of the Skull with Considerable Loss of Brain Substance and Extensive Laceration of the Longitudinal Sinus—Recovery—with Observations. By J. Stannus Hughes, M.D., F.R.C.S.I.

Feb. 5, J. O'B., 35 years. Struck on the back of the head with a heavy iron coal box whilst at work in the hold of a ship. On removing the hair an extensive depressed fracture of the skull implicating portions of the occipital and parietal bones was revealed. Patient was in a state of complete insensibility, but on the removal of the piece of depressed bone an alarming hæmorrhage from the longitudinal sinus set in; on which the patient, without assistance, sat up on the operating table and asked in a loud voice and in a rational manner, "What has happened? Who did it? Is my mother here?"

The several pieces of bone removed were as large as the palm of the hand. Patient recovered completely, as far as the external wound was concerned. But the interesting part is in the examination of the field of vision later.

Ophthalmic Examination by H. R. Swanzy.—The ophthalmic examination reveals no abnormality of any kind in either fundus oculi. The optic nerves, so far as they can be seen, are perfectly healthy. His central vision is nearly normal.

What he does suffer from is a lateral hemianopsia. The defect occupying the right hand side of the field of vision of each eye and dividing the field precisely in the perpendicular meridian, the fixation spot, however, having escaped.

This, of course, indicates some disturbance in the course or at the origin of the left optic tract. What the nature of that lesion may be I am not prepared to say; perhaps a disorganization of the nervous tissues due to an extravasation of blood, perhaps direct injury. Probably you yourself will be able to form the best conjecture on this point, being acquainted with the case from the commencement.

The report of A. H. Jacob and F. Wilson coincided with the above.

DR. JACKSON: I have within a few months, seen a case of hemiamblyopia, with the divisions between the amblyopic portions of the field, as in Dr. Tilley's case. Within the amblyopic field a segment smaller than a quadrant, with indefinite outlines, which was absolutely blind. The reactions of the pupils were quite normal. The condition followed a gunshot wound of the occipital region of the opposite side.

DR. DE SCHWEINITZ described two cases of lateral hemianopsia, the result of gun-shot wound of the head; in one there had been chromatopsia. He thought the presence of cortical hemianopsia, without other symptoms, and in the absence of Wernicke's pupil symptom, practically located the lesion in the cuneus, and referred to the works of Temer, Monk and Seguin. The question of trephining should be decided by the amount of disadvantage and discomfort the patient experienced as well as the amount of good that would result. The intimate relation of a large, venous sinus to the trephine wound did not in itself con-

traindicate the operation, because it had been demonstrated that hæmorrhage from wounds, even of the lateral sinus, could be controlled with remarkable facility by packing.

A PLEA FOR THE GENERAL ADOPTION OF THE AXIS-TRACTION FORCEPS.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY JOSEPH HOFFMAN, M.D.,
OF PHILADELPHIA.

In presenting any question concerning the forceps I am well aware that I am treading upon hackneyed ground. Without preface I shall hasten to the statement of my argument for the adoption of the axis-traction forceps. First of all, the use of the forceps is to be considered as an *obstetric procedure*, which before employment, is to be fully justified, both in the interests of the mother and of the child, entirely apart from the convenience or prejudice of the operator. The forceps are to be applied, neither because the mother demands them nor because they are a time-saving convenience for the obstetrician. Their use is strictly a logical one, and must be differentiated from every fallacy of apparent justification. The question has been asked, Can there be a too frequent use of the obstetric forceps? On the other hand, we hear continually of the "abuse" of the instrument. Now, if a part of the practicing obstetricians are in doubt as to whether they shall not use the forceps on every occasion where there is delay or other seeming cause, and if another portion give them only an occasional place in their application, the position of the two must be entirely different. If their application is for obstetric good and not for convenience, which must be conceded, they must save either mother or child, or both, from troubles or dangers she would otherwise undergo. Given a normal pelvis and a normal head and presentation, with normal application of forces, the labor has for its accidental factor the dilatation of its maternal soft parts. Now, if such dilatation, both perineal and cervical, is tardy, it is evident that an early application of the forceps must be accompanied with consequent injury to the maternal structures, while the injury to the child must, or should be small, under skillful application of the instrument. If now, on the other hand, there is free relaxation of all the soft parts and a deviated presentation, or a slight disproportion between the diameters of the foetal head and those of the pelvis, which uterine contraction and external manipulation have been unable to overcome, thereby prostrating the mother and interfering with the foetal circulation, the use of the obstetric forceps comes under consideration as a preservative measure,

and is directly advantageous, as it can be applied without force or forcible effects upon both mother and child. It is at this point that the general misconception of the use and intention of the forceps arises. Probably it is a teaching fault as well as a learning fault. Once let it be considered that the foetus in the pelvis is a foreign body like the aching tooth in the jaw, and we have the obstetric forceps and the old tooth-key, similar instruments of torture, both having force as the foundation of the ends they would attain. This idea, unfortunately, even if not confessed, is that followed out by too many obstetricians and obstetrical teachers, whose lectures must indorse, as a resultant of their ideas, pressure forceps, blades useful for leverage, and the like. It makes the forceps a lever or a tongs, with which to pull or pry by force, and loses sight of the principle that it must be for harmless application, the supplement of existing forces—to be used in their lines if they are normal, to restore them if abnormal, and to conserve or reinforce them if they are weak, and to substitute them if under certain conditions they are absent. Once accept and apply these principles and the abuse of the forceps ceases, even in cases where otherwise their application would be questionable. So far as the foetal head is concerned, in what light must the ordinary obstetrical forceps be considered? From a mechanical standpoint we must see that it works at a manifest disadvantage. Its adaptation to the foetal head is maintained, no matter what the resistance opposed by the maternal structures, by a maximum pressure at the extremity of the long arm of the lever composing the handles. If the resistance is small, the pressure is not less, but only shorter, owing to the speedy escape of the head, and expends itself to the disadvantage of the mother, in damage to the perineal floor. If this force is not applied the instruments slip, and damage both the foetal head and the maternal structures. If the resistance is great, the compressing force must be necessarily great to overcome it, while the contusing force upon the maternal structures is proportionate to the resultant of the force expended in the axis of the pelvis and that lost against the pubic bones. In the use of the ordinary forceps this ratio must exist; it is a mechanical necessity and must be overcome, if at all, by mechanical principal efficient according as they approach mechanical exactitude. With this approach to mechanics we must lose sight of all idea of violent force, of which much may be lost and compensated for by additional force. Considered from the standpoint of the foetus the force expended against the pubis is lost; considered from a maternal standpoint the force becomes harmful in its pressure effects, just as also the additional force by direct pressure upon the foetal head is harmful. It therefore appears that considered mechanically the ordinary obstetrical forceps is a

defective instrument, permitting neither the satisfactory utilization of the force applied, nor its regulation so as to conform with the principles previously suggested. Now, as the pelvic axis is the line in which all forces must act in order to be effective, it follows that the greater the deviation from a normally formed pelvis, the greater must be the resistance to any force acting outside of or at variance with this axis, and that in cases of pelvic malformation the violence must be correspondingly greater, both to maternal and foetal structures.

The problem is accordingly presented as follows: Given a resistance we must apply a force which shall work along the axis of the pelvis, and at the same time minimize lost energy and maximize the energy exerted in the axis of the pelvis and which alone is efficient in the expulsion or delivery of the foetal head. The more nearly this problem is solved the more direct will be the traction, the less will be the force required, and the more natural will be the artificial delivery, or, as has been suggested above, the two will supplement each other. To fulfil the above indications numerous modifications of the common forceps have been invented, among which are those of Hermann, Hubert, Hartmann, Morales, and I think we may justly say, finally culminating in those of Tarnier. These have been essentially modified by Poulet and others. The latest German idea, that of Breus, I regret not to be able to present. It is ably advocated by Winckel, though too much to the exclusion of Tarnier's forceps.

The conformity of the pelvis is such that when occupied by the foetal head, the problem to bring an ovoid body through a circular canal with a curved axis is presented. Now to accomplish this it is evident that the force should be applied to the centre of the head or foetal ball, and should act in the centre of the cylindrical passage, the vagina, and at the same time varying in reference to the position of the application of the force as the head descends in the pelvic curve.

The ordinary objection urged against the Tarnier forceps is the danger of rupturing the perineum by the traction apparatus. This is entirely theoretical, as the rods are to be kept parallel with the forceps handle, and when this is done they practically fall within the blades, and can do no damage that would not occur without them. With both Tarnier's forceps and Poulet's modification they of the blunders yet common with many practitioners cannot be perpetrated. I refer more particularly to the so-called pendulum or lever motion of the forceps, and to the rotatory motion advocated by Osiander. These manipulations, while practicable in the ruder arts, have no place in obstetrics, and can result only disastrously to the maternal tissues. It will also be seen that the direction taken by the head as it engages, must be in the path of the least resistance,

inasmuch as the traction exerted does not guide, but only applies a force that is directed by the handle, which indicates lateral variations in the descent upon the perineum. These lateral deviations are the foundation of the excuse for the pendulum movements, which are only experimental manoeuvres to determine in what direction the head will move most easily.

A brief epitome of the specific positions in which axis-traction is especially advisable is all that can be set down here. First of all, in high operations in which it is desirable to make traction in the pelvic axis and not against the brim, a careful analysis of cases will show that the axis-traction principle offers better results, so far as the mortality of the child and the effects on the maternal structures are concerned, than pressure forceps.

As was before remarked, in deformed pelvis the results must be even more notable. In occipito-posterior positions any tendency of the head to rotate is not interfered with, but is allowed to take place freely. In my hands I have noticed a complete revolution of the blades and, of course, of the head in their grasp. In other occipito-posterior positions, in which the perineum usually suffers severe laceration, the lifting effect of these forceps—which, while bringing the head downward and outward, nevertheless raises it toward the pubes—is peculiar, and cannot be imitated by any other procedure. That of Osiander, while essentially the same in its intent, cannot be compared in its accomplishment.

In the low operation, in which the short forceps are commonly applied, the same effect can be justly claimed. The short forceps, as such, in my estimation, have no place in obstetrics; I have no doubt that of all instruments they inflict the most damage to both mother and child. If, when the head is on the floor of the pelvis there is any need for the application of forceps, the axis-traction principle is the one that fulfils all the indications, expediting labor and at the same time saving the perineum by lifting, not dragging the head through.

The final argument for the general adoption of the axis-traction principle is, that by it the force is applied at the centre of or near the centre of the fenestration, and that hence the leverage effect which must be exerted upon the structures within the grasp of the blades, must cause less direct violence.

ARISTOL.—Aristol, the new substitute for iodoform, is reported by various observers to prove efficacious in many cases where iodoform has been successful. It is said to be non-poisonous and has the very decided advantage of being without odor.

REPORT OF A CASE OF TRANSPLANTATION WITHOUT A PEDICLE FOR CICATRICIAL ECTROPION, BLEPHAROPLASTY? BY WOLF'S METHOD.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY J. MORRISON RAY, M.D.,

SURGEON TO THE EYE AND EAR DEPARTMENT, STS. MARY AND ELIZABETH AND LOUISVILLE CITY HOSPITAL; CLINICAL LECTURER ON EYE, EAR AND THROAT, UNIVERSITY OF LOUISVILLE (SPRING COURSE).

The increasing number of successful flap operations without a pedicle, induces me to report a case and to urge its more general adoption in cases of extensive cicatricial ectropion.

Geo. Davis, negro, æt. 32, came under observation at the Louisville City Hospital. Six months previously he was blown up by the premature explosion of a blast. The skin of the right side of the face and head was extensively destroyed. The angle of the mouth, ala of the nose, and the forehead were involved in dense cicatricial tissue. The lower lid was entirely destroyed. The upper lid was everted and firmly fixed to the supra-orbital margin. The free border of the lid was well preserved and contained normal cilia; the eyeball was free from injury, but showed conjunctivitis and superficial corneal erosions from exposure. From the amount of cicatrix on the face, a gliding or pedicle flap seemed impossible. The method of Wolf was therefore decided upon. Chloroform was given; the conjunctiva and cul-de-sac were flooded with a warm bichloride of mercury solution, 1-6,000, and the surrounding parts thoroughly cleansed with soap and water and the bichloride solution. The upper lid was dissected from its attachment to the brow. The cicatricial bands were freely divided and the lid margin brought well down, and by four stitches attached to the stump of the lower lid.

This left a surface 2 inches long by $1\frac{1}{4}$ in width to be filled by transplantation. One small artery bled freely and required twisting. The surface thus exposed was left and the arm prepared. A space measuring 3 inches long by $1\frac{3}{4}$ in width was mapped out on the left arm to the inner edge of the biceps, as near as possible the shape of the gap to be filled. The field of operation was rubbed well with ether, then with soap and water, and flooded with the warmed bichloride solution. The skin was dissected up by means of a pair of iridectomy scissors, care being taken to get the flap free of all subcutaneous connection and fatty tissue. The flap was surrounded by warmed bichloride gauze. By the time the skin was well loosened up, the oozing from the lid wound had stopped and the surface appeared dry and glazed. The flap was quickly freed, placed on warmed gauze and rapidly transferred to the lid. It fitted

well save at one place, where the flap overlapped; a small strip was here cut off by scissors.

No stitches were inserted, but the flap was pressed well down in contact with the cut surface, and the parts covered with moistened gold-beaters' skin. The parts about were smeared with iodoform ointment; over these several layers of iodoform gauze; then a small bit of absorbent cotton, and firmly bandaged. The other eye, which was not injured, was left free.

While the flap was being adjusted in position, my friend Dr. Vance dissected up the edges of the wound in the arm, and brought them as nearly as possible together by a continuous suture, but the piece removed was so large, that complete coaptation was impossible. This wound was also dressed with iodoform gauze and a bandage. The next day the patient was sitting up.

The dressings were not disturbed until the fifth day, at which time all save the gold-beaters' skin was removed. Through this, the transplanted piece looked healthy, and there was no secretion. Iodoform gauze and a light bandage were reapplied and changed daily until the ninth day. At this time the stitches which bound the lid down were cut loose, and the gold-beaters' skin removed.

The flap was firmly united throughout, and on pricking with a pin, sensation seemed to be present. It was now dressed with iodoform ointment and a light bandage.

On the twelfth day, the epidermis began to loosen around the edges of the transplanted skin. On the fourteenth day he was exhibited to the Medico-Chirurgical Society of Louisville, and beyond the desquamation which extended around the edges about $\frac{1}{8}$ of an inch in width, the flap looked well. In a few days this came away, leaving a granulating surface surrounding a central portion on which the epidermis was still adherent.

Contraction began at the end of three weeks, and in a short time the surface had contracted to one-third the size of the original surface. Three months and a half after the operation he was last seen, at which time he presented a central portion of healthy integument 1 inch long by $\frac{3}{4}$ of an inch wide, surrounded with a narrow whitish band which corresponded with the portion for which the epidermis had desquamated. The lid was freely movable and the cornea easily covered.

Flaps as large as this have rarely been successfully transplanted, but it is our belief if care in its adaptation and perfect cleanliness in the work be carried out, it will, in the majority of cases, be successful, and deserving of merit as a plastic procedure. From a study of this case and others recorded, the following conclusions seem justified:

1. If perfect antiseptic and aseptic measures be instituted, large flaps of skin may be successfully transplanted.

2. The flap must be quickly dissected by scis-

sors, free of all connective and fatty tissue, and rapidly transferred to the surface to be filled.

3. Before the flap is placed on the denuded surface, all hæmorrhage must be well stopped.

4. Perfect immobility of the lid must be obtained by stitching its free edge to the lower, or to the cheek, and care taken to have the flap in exact apposition, no air bubbles being allowed under it.

5. Stitches are not required to hold the flap in position, since suppuration at the stitch holds may be a source of infection, and the parts can be held in perfect apposition by gold-beaters' skin or non-contractile collodion.

6. The size of a transplanted piece must be one-third larger than the surface to be filled, since the skin contracts after being dissected loose.

7. The lid must be brought as far down as possible, since the contraction that follows the healing process will lessen the transplanted surface to one-third its original size.

8. The dressings should be left undisturbed for five or six days, in order that firm adhesion may be formed between the surface and the transplanted skin.

9. The surface to be filled must be a freshly denuded one, for if it be a granulating surface, the secretions will lift up the flap, and sloughing follow.

DR. HORTZ, of Chicago: The final result of the transplantation of Wolf's flaps is seldom satisfactory; its shrinkage makes the lower lid turn down again; its thickness makes the upper too heavy. Prof. Thiersch's method is better suited for the upper lid and also good for the lower lid. He takes large flaps of epidermis including the Malpighian layers, shaved off from the arm with a razor. These grafts take much better than Wolf's flaps; they make a thin, light coat like the original skin of the upper lid, so that it can be opened and closed in the most natural manner.

ALCOHOLIC HEREDITY IN DISEASES OF CHILDREN.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY T. D. CROTHERS, M.D.,
OF HARTFORD, CONN.

A. B. came under my care for home treatment for periodic inebriety. He has used wine on the table at meals for twenty years; for ten years past he had drunk in paroxysms. His wife used wine on the table also, and during pregnancy and lactation had used both beer and wine freely. He had two children, one a girl of eight years, the other a boy five years old, both invalids, and had been under constant medical care from infancy, the general diagnosis being scrofula and general

anæmia; and both were of pale and delicate appearance, extremely excitable and nervous.

They had continuous irritation of the stomach, from an unrestricted diet of all kinds of foods and drinks, except wine and beer; were very passionate at the slightest opposition to their wishes, and after a period of rage would be greatly exhausted and have a distinct fever for a day or more. The girl had attacks of emotional religiosity, in which she manifested great sorrow and melancholy at her sins, and asked the prayers of all persons she came in contact with; at other times she was precociously bright, and irritable at any opposition to her wishes.

The family physician had no faith in heredity, and treated these various conditions as so many symptoms of threatened organic disorders which his skill and remedies prevented from gaining farther. Both had suffered from rubeola and scarlatina, and were supposed to have never fully recovered. Bronchitis, enteritis, gastritis, neuritis, and various heart diseases, were constantly threatening, and as constantly averted. Finally, death of the physician brought a new man who recognized the alcoholic heredity of these cases, and ordered them to the country where the diet was restricted, and enforced exercise outdoors, and frequent bathing when it could be carried out.

These children had marked nerve and brain instability, with low vitality, and were neurotics, which would of necessity develop insanity, inebriety, or any other form of nerve and brain degeneration; and the rational treatment should have recognized this condition, and given special attention to the diet and surroundings, and the avoidance of all existing causes that would stimulate the brain and nervous system.

A physician wrote me that he had given tincture cinchona to a neurotic child of one year of age, for slight fever which resembled malaria. In a short time the child would cry for the medicine, and only would be satisfied for a little time after it was given; on one occasion it took at once a two-ounce mixture of this drug. He changed to other tonics, but found that nothing would satisfy the child but tinctures. The child was found to have an alcoholic mother, who died soon after its birth, and the alcohol in the tinctures aroused an organic memory which had been inherited.

In private practice, some years ago, I treated a little boy for over five years, for the most confusing and varied disorders and diseases that it was possible to have; he recovered from one disorder only to be prostrated with another. None of them were well defined or clear, and much difference of opinion prevailed among the numerous medical men who were called in consultation. At puberty this boy became a pronounced dipsomaniac, suddenly, and without any special temptation. Years after he came under my care, and

was a chronic case. From a study of his history it was ascertained that his father was an inebriate, and died before he was born. Here was an alcoholic heredity, which had escaped notice; and where the alcoholic neurotic symptoms were not understood.

I think we may confidently expect of the practice of medicine, that in the near future such cases will be treated so successfully that the alcoholic or insane predisposition will be warded off. I have heard of numerous instances of children from infancy upward to puberty, upon which alcohol in any form and in small quantities acted as a hypnotic; in some cases no other medicine could be tolerated, and in some alcoholic heredity was present, and in others it was not clear.

In the study of the early history of inebriates, a great variety of diseases common to childhood appear, and seem to have been more intense than in other children. Such cases seem to have suffered more severely than others from nutrient disorders, shocks, and traumatism; they are freighted with some heredity or predisposition to particular forms of degeneration; the organism has received a certain bias, from which it cannot escape. Alcohol, of all other drugs, seems most potent to impress cell growth and function.

No fact is more firmly established than that alcoholic ancestors will transmit to their children a defective brain and nerve power. The form and shape of this defect and its manifestations will vary widely.

In many cases it may not be prominent until after the higher peripheral brain has reached a certain development, especially in the growth of the emotional and inhibitory centers. In others this defect is seen in infancy, in an abnormal hyperæsthesia of the senses, and nutrient disturbances. Some children manifest irritation at all sounds, and all changes of light and surroundings, by continuous crying; the skin or alimentary canal is also very sensitive, and various skin disorders and nutrient troubles follow. Low powers of vitality and slow, irregular growth are common. This condition may continue for years, then gradually disappear, and only re-appear at puberty, or later, in some distinct form of degeneration. Sometimes a marked neurasthenia and anæmia appear in early life and continue up to puberty, then break out into some disease, or develop some hereditary malady.

Another class of children are noted, who come from alcoholic ancestors, by their precocious development of brain and nerve force. They exhibit powers of brain receptivity and instability that is called genius, which give way early to some disease or form of nerve degeneration from various causes. Inebriety, insanity, or both, are very common sequels. Alcohol or opium in any form is almost always a grateful remedy, and is demanded in many instances by the patient. The

use of bitters that contain large quantities of spirits is also very popular, and an unconscious organic memory is awakened that rarely dies out.

In some children this craving for spirits is manifest very early. A case of this kind was brought to my notice by Dr. Smith, of New York, where an infant of two months old could only be quieted by a few drops of spirits. Its taste was so pronounced that it would stop nursing at the sight of the person who gave the spirits, and cry until it was gratified. Fortunately, such instances are not common; but the abnormal tastes of children, and their extreme sensitiveness or obtuseness to sensory impressions, and low powers of vitality and recuperation, are often clear symptoms of an alcoholic impression from ancestors.

This alcoholic heredity will be seen in children that manifest extremes of activity, particularly where there is a tendency to the sudden liberation of nerve energies, as in violent passion (grief or joy) or work, play, or study, which is followed by extreme prostration. The child is said to be sullen, morose, or melancholy, then suddenly manifests the other extremes, indicating a great instability of brain cells and functional control. Its life seems to be threatened with fevers, prostrations, and inanitions, accompanied with mental irritations and wandering neuralgias that tax severely the skill of the physician. These conditions may follow other heredities, but they always point to a degree of nerve and brain degeneration or retarded development, and defective co-ordination, that must be recognized in the treatment.

In all cases where alcoholic ancestors, even back to the second generation, can be traced, there are certain predispositions which must be considered in the treatment.

First. A tendency to exhaustion from feeble vitality, and low power of restoration. Tonics and nutriments that have a direct stimulant action on the brain should not be used, such as alcohol and opium, and meat broths. These remedies have a tendency to still further exhaust the vital forces, paralyzing the nerve centers and increasing the carbonaceous matters of the system.

Second. An instability of cell and nerve function, and strong predisposition to develop into some particular form of degeneration, which is practically an exhaustion of the higher brain centers with craving for relief. All stimulants and remedies which act on the brain centers increase the existing degeneration.

Third. There is a special affinity for all nerve stimulants by those higher brain centers. Their use constantly interferes with the natural development of brain energy from food. Thus, alcohol, tea, coffee, and other substances have a peculiar delusive effect.

From these facts it will be obvious that the diseases of children of alcoholic parentage are far more complex, and require greater care. In ad-

dition to whatever disease they suffer from, there is always neuræsthenia and defective control of the brain centers, which may come into prominence at any moment, from causes both known and unknown. This hereditary bias and neurotic instability enters into all cases.

The general principles which should govern in the treatment may be grouped as follows: 1. No form of alcohols are safe, and narcotics of all kinds should be used with great care. 2. The diet should not include meats of any kind, because of their stimulating character; while meats contain much food force, they act as stimulants to a brain already over-stimulated and exhausted, and increase the peril of nervous disease. The pathological tendency of all these cases is to become alcohol-takers and meat-eaters, hence the diet should always be non-stimulating and farinaceous, and should be carried out with military regularity. 3. The hygienic treatment is also of the greatest importance; every means and measure which can build up a system, and avoid brain and nerve stimulation, is required. 4. Cases of this character should be guarded against every possible extreme, both in the surroundings and physical conditions that are under the control of the physician. The tendency of all energy and nerve force is to pass off in explosions, which should be counteracted; the diseases they suffer from show this tendency to concentrate and become intensified in certain directions, also to manifest distinct exacerbations. Finally, the fact of an alcoholic heredity in disease of children that we are called upon to treat, gives a wider therapeutical range of possibilities, both in direct and preventive medicine.

Recent studies of alcohol cases show that over seventy per cent. are directly inherited. If this is confirmed by later studies, the treatment of inebriety will in the future begin in infancy, and the higher science and art of medicine will win its greatest triumphs along the line of prevention.

SURGERY OF THE SUPERIOR LARYNGEAL NERVE IN SPASMODIC DISEASE OF THE LARYNX.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY J. P. CREVELING, M.D.,
OF AUBURN, N. Y.

The operation of which I am about to speak is one, as far as I know, new in surgery of the larynx, and one of sufficient severity to preclude its performance except in very rare cases where all other means afford no relief, and when the disease is sufficiently severe, as to render the life of the patient so uncomfortable that any procedure, however grave, if it presents even a prospective chance for relief, becomes justifiable and proper.

It will be seen later on that the merit of the operation is based on the result of two cases only, one of which was seriously complicated. It will also be seen that in the first instance the manifestation of the laryngeal disturbance was not confined to that organ alone but reflected to the lungs, producing asthmatic breathing, not very severe, but enough to give annoyance and excite apprehension.

It was not for this disease, however, that advice was sought, but for one of a much more serious nature; one for which no less severe measures could be adopted. It was in this case that I first noticed the result in the larynx of dividing the superior laryngeal nerve. I did not observe the extreme liability of food to pass into the larynx that I had feared, and therefore was less timid to attempt a similar operation for a purely laryngeal trouble of a less formidable character.

In brief I will give the history of the two cases:

Case 1.—M. C., a female, aged 30, consulted me in September, 1888, for a large irregular tumor situated in the base of the posterior triangle of the right side of the neck, and difficult or asthmatic breathing. The tumor extended down under the muscles toward the median line and rested against the trachea. Examination with the laryngoscope disclosed a tumified and engorged condition of the laryngeal mucous membrane, extending into the pharynx. The epiglottis alone remained normal.

I attributed the throat disease, as well as the asthmatic attacks, to pressure of the tumor, and proceeded to operate without unnecessary delay. The base of the growth proved to be large and nodular, pressing firmly against the trachea and adherent to the carotid capsule. It was quite easily detached from the trachea but it was necessary to remove an inch or more of the capsule of the artery. After the removal was completed the wound was closed, which healed kindly, but neither the breathing nor the laryngeal condition were benefited. She declined throat treatment and all other remedies calculated to relieve the disturbed respiration, because she had anticipated a cure with the removal of the tumor.

In about six months she again presented herself with a growth in the posterior part of the upper triangle of the right side of the neck, and one in the upper half of the anterior triangle of the left side also, extending from the angle of the inferior maxillary down along the side of the thyroid cartilage. In extirpating this last mentioned one it became necessary to divide the superior laryngeal nerve. After recovering consciousness it was observed that she was extremely hoarse, and deglutition somewhat embarrassed, but the difficult breathing had been overcome. From this time on she had no more trouble in that direction. It took a long while for the hoarseness to entirely pass away, and in fact the for-

mer strength of voice was never regained. The first opportunity for making an examination of the larynx was some eight months after the operation, when it was found the vocal apparatus of the left side was feeble and responded with less vigor than the right. This was about the only difference noticed in the two sides.

From the facts stated it is evident the tumors were not the cause of either the throat or asthmatic disturbance, as neither was relieved after the first operation although the growth pressed both the pneumogastric and trachea, and both conditions existed before the second growth appeared.

Case 2 does not present the complications of the one just cited, but is a typical case with the following history:

M. G., female, age 17, applied to me for treatment in January, 1890, stating that for some months past she had had "some trouble with her throat which caused her at intervals to make loud and unnatural noises, accompanied by a jerking of the muscles of the neck and motion of the head. The paroxysms occurred quite suddenly, without warning, and with sufficient frequency to prevent her leaving home without great discomfort from attracting the notice of those near her; that she was becoming nervous and irritable from the continued annoyance, and that she must have some relief at whatever cost." There was no uniformity of tone in the perverted voice: it varied from a high pitch to a low bass or guttural sound. In conversation the voice was thick and rough and some syllables not sounded. Prolonged speaking increased the hoarseness, produced discomfort in the throat and rendered the attacks more frequent.

The disease had been diagnosed as a nerve disorder by all who had treated her, so that she had taken the whole catalogue of tonics, antispasmodics, sedatives, stimulants and electricity, with no benefit.

An examination of the throat disclosed a chronic laryngitis involving the whole tube but more marked on the left side, to which side the left arytenoid body was firmly drawn, resting against the wall of the larynx.

On attempting to sound the vowels the summit of the arytenoid seemed to roll upward and outward, instead of inward to meet its fellow of the opposite side at the median line. No examination could be made during the paroxysm.

The parts were thoroughly cocaineized, but while the mucous membrane became pale, and sensibility was reduced to a minimum, it had little or no influence in preventing or modifying the attack. Local treatment was tried for a time but it gave only a negative result. Having in mind the case above mentioned, I concluded to cut down and search out the laryngeal nerve and make gentle traction on it with a view to overcome the spasmodic tendency.

An incision was therefore made just anterior to the carotid pulsation. The dissection was slow, as it will be remembered the superior laryngeal nerve is given off from the pneumogastric high up in the neck above the bifurcation of the artery, and that it passes downward and forward obliquely behind both the internal and external carotid as well as the superior laryngeal artery; and that the nerve divides into an external and upper branch above the bifurcation of the artery.

The nerve was at length found and put upon the stretch by passing a hook behind and lifting it from its bed. It was then traced from the carotid sheath to the point of division. The wound was closed. As soon as she recovered from the chloroform it was noticed that she was equally as hoarse as the preceding case, but that the throat spasm had entirely disappeared. She gradually regained her former voice. As far as known there has been no return of the disease.

From the result in the above two cases it may be inferred:

1. That the superior laryngeal nerve has an important bearing in spasmodic disease of the larynx.
2. That irritation of its terminal fibres as well as of the body of the nerve, may produce spasm of the larynx.
3. That a disturbance of this nerve may be reflected to other parts supplied by the pneumogastric and *vice versa*.
4. That division of the superior laryngeal may not be followed by serious results in the larynx.
5. That proper tension applied to the shaft of the nerve may modify its influence or action on the parts to which it is distributed.
6. That under certain circumstances it may be advisable to stretch or divide the nerve.
7. That the operation should not be performed except to relieve some extreme condition not amenable to other treatment.

ON THE MEDICAL TREATMENT OF DIPHTHERIA.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY WM. H. DALY, M.D.,
OF PITTSBURGH, PA.

Much has been taught of late years, yet little of practical value learned, of the more successful medical treatment of diphtheria. This fact is witnessed by the continued high death-rate. And yet it is still to the medical and not the surgical treatment that the patient must hopefully look for salvation, since, at best, the surgical aspect of intubation and tracheotomy, though valuable aids in the easement of patients, are employed as a last resort in cases that have become desperate and imminently dangerous to life.

I have no intention of attempting to tell you anything new as to the medical treatment of diphtheria, but you will pardon me if I undertake to draw your attention again to a well-tried plan of treatment which I had the honor of bringing to the notice of the profession in a paper entitled "The Simplest and Most Efficient Treatment of Diphtheria," which I read before the Congress of the American Laryngological Association in Philadelphia in 1886. The treatment may be new to your experience as it was recommended and is still uniformly *practiced* by me with more satisfactory results than by any other plan. I say the strict plan may be new to your experience as medical men, since circumstances are so apt to modify, and personal judgment is prone to change any plan from the lines recommended.

Now is it not better to bring again to your notice, after four years further trial, a really *good plan* of treatment, than to undertake to tell you of something that is new and at best only a candidate for that bountiful hospitality which the profession is now extending to everything new and novel, and has done so for the past ten years. We really flourish in an era when novelty, no matter how absurd, can get a lodging place and the best accommodations and willing disciples to propagate a worship of it whether it be pumping gas into the recti of the phthisical patients à la Bergeon, or the injection of an emulsion of the testes of the barnyard fowl into the tissues of the prematurely aged or decrepit.

A novelty is our idol for the day, a medical fad is a trick to lure our poor human frailty, not that we like to deceive but that we are so easily deceived.

Since the article before alluded to, there has been no end of modifications of the plan of treatment there inculcated, each with its advocates, all or nearly all of the methods containing a mercurial. Many of them I have tried, being of a progressive turn, but I have invariably had reason after trial to think better of the results obtained with the calomel treatment pure and simple. I hope no gentleman will hold me to account for not mentioning this or that remedy for the medical treatment of diphtheria, as I am not encyclopedic in my character as a therapist in this disease, and do not intend to wander far from the pure calomel treatment until some other plan is so well established by others as to assure me better results than I now get, and that you can get if you will follow the plan as I have, and not handicap the treatment with all sorts of other drugs, local and constitutional. I am not an enthusiast by any means, inasmuch as the success from any plan of treatment I have tried has never been sufficient to make one feel proud of medicine, but of all I know and have tried this is the best; try it, try it as directed, and don't modify it with any of the one hundred and one things

that are newer, that theoretically seem as though they ought to be good.

It is admitted on all sides in our profession, that calomel is a most active germicide, and were it soluble in water, would soon displace the bichloride of mercury in surgery, but in diphtheria there is an advantage in being able to give this medicine in powder in large doses in that we get the local germicidal action as well as the constitutional effect, and I am sure that if our remedy is early administered that many of the threatening complications may be prevented. In the personal letters I have received from my colleagues since my first paper concerning this treatment, they tell me some of their patients die suddenly, during apparent convalescence, after all the membrane has disappeared, and they appear to die from heart paralysis or from heart clot.

We all know that the calomel pulse is a slow pulse, and also that the poison of diphtheria is one of great depression of vitality, therefore, in view of the possibility of this accident occurring, it is an important point to keep the patient in a strictly recumbent posture until convalescence is well established and far advanced, and this, in practice, is difficult to inculcate with parents and nurse.

Now, what is the method clinically? We will say, to a child three or four years old, suffering from diphtheria (early recognition and opportunity are, as a matter of course, of the utmost importance with this as with any other plan) give of pure, untritured or unmixed with sugar, calomel, in two or five grain doses every one, two or three hours, either dry on the tongue and washed down with a little ice water, or, better, given floated on a little ice water in a teaspoon. This is repeated at intervals until free catharsis follows; the stools are to be carefully observed, and when they assume the appearance of having floating in them gelatinous masses of dark, rather brightish green bile, giving them an appearance resembling chopped spinach, or the water-polyps seen in watering troughs, then the intervals of the dose can be lengthened so as to keep up this condition of catharsis to the extent of one to three stools each day. It is not well to diminish the dose, but simply to lengthen the interval, as there is less liability by this means to produce ptialism. This is an important point and ought to be remembered. It has been a matter of much surprise to me that there is so little depression caused by the exhibition of these large and frequently repeated doses of calomel in diphtheria, and that ptialism is so infrequent, especially so if the careful observation is made to keep up catharsis, or rather that fluid condition of the contents of the alimentary canal where the osmotic action is toward them from the blood-vessels, and not *vice versa*. Under this condition of treatment the membrane exfoliates and reforms, if at all, with less and less readiness; the fever abates; the prostra-

tion is slowly replaced by brightness and a disposition to activity, which latter should, of course, be prohibited, lest heart paralysis or syncope should suddenly supervene and cause a sudden fatal termination to the otherwise favorably progressing case. One may exhibit two to five doses of the chlorate of potassium intermediately but this I have not found necessary. I have adhered to the calomel in large and frequently repeated doses, with rather light but nutritious fluid diet, and have found it the most efficient of any treatment; and withal so simple for the nurse and so merciful to the patient. The latter is no small factor in the method, when we compare the dreadful struggles of the little sufferer at the sight of the commonly used—shall I not say abusively used—throat brush and bottle, and all the other implements of the more elaborate treatment to this simpler one of getting the child to open his mouth to drop a powder in, followed by a readily accepted spoonful of ice water. There is needed no argument to show which is the most desirable practically; and I can assure you that this needs but a faithful trial to show you the greater efficiency of this over all other plans of treatment in results.

But there are some rules which I beg you will follow faithfully. These are: 1, Give calomel in its purity. 2, Give it in large doses. 3, Give it frequently. 4, Give it until you have the free and characteristic catharsis. 5, Give light, nutritious diet. 6, Give little or no other medicine. 7, Keep your patient recumbent until convalescence is far advanced.

If these simple rules are followed and common sense is allowed to take the place of common prejudice, you will save more of your diphtheria patients by this than by any other method known to modern medicine.

THE EFFECTS OF DRY ATMOSPHERE ON CHRONIC INFLAMMATION OF THE LARYNX AND NARES.

Read before the meeting of the American Climatological Association held in Denver, September 2 to 5, 1890.

BY E. FLETCHER INGALS, A.M., M.D.,

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In this paper it is my object to invite your attention to a subject upon which unfortunately we have little precise information, hoping thereby to elicit a discussion in which the observation of others may help to remove the deficiencies which I am obliged to confess. The views which I shall here express are based on the study of a large number of cases, but I shall make no attempt to present the histories of these cases in substantiation. Most of my patients live in low altitudes, many of which are damp; though I fre-

quently see patients who live in a high and dry atmosphere.

In trying to analyze these cases I have been unable to decide satisfactorily what particular phases of the disease are benefited and what injured by the dry atmosphere. In the majority, I presume at least four-fifths, dryness of the atmosphere seems beneficial, but in some it is certainly injurious. At first sight it would seem that cases in which there is excessive secretion would be benefited by residence in a dry atmosphere, whereas those suffering from the opposite condition would be injured, but numerous cases attest that this does not follow in all instances: for example, in simple chronic rhinitis with excessive discharge, we find a given number of patients improved by removal from the shores of large bodies of water inland, but a limited number of cases with the same disease will be benefited by moving from inland districts to the damp climate of the sea shore, or the borders of our great lakes. We find now and then a patient greatly improved by going to a high altitude with a dry atmosphere, but usually catarrhal cases are injured by this change.

The more we see of these diseases, the more we are impressed with the fact that catarrhal inflammations are found alike in the damp, chilly atmosphere of the sea shore, or upon the arid plains of Arizona, in the most favored localities of our southern States, and in the delightful atmosphere of Colorado, though not to the same degree in each section.

We may assume that the inflammatory affections of the nares and larynx are essentially of the same character, and that therefore they will be influenced in a like manner, though in different degrees, by various climatic conditions.

These affections we will therefore class together as catarrhal excepting in those instances where we use a qualifying phrase, as for example, tubercular laryngitis.

Usually these catarrhal affections are less frequent in warm climates, therefore, a warm, equable atmosphere would seem best adapted for their prevention or cure. However, in equable climates the air is loaded with moisture, a condition which undoubtedly favors the development and maintenance of certain forms of catarrhal inflammation, yet the opposite condition of dryness also has its disadvantages, for it favors the formation of dust and allows the air to be laden with various irritating substances which might be absent in the damper atmosphere. As certain impalpable substances in the atmosphere cause asthma, so in some cases similar substances will excite chronic inflammation of the mucous membrane of the upper air passages. The damp, and often chilly atmosphere of the Atlantic sea shore, and the sudden changes along the borders of our great lakes are peculiarly favorable to the devel-

opment of this disease. Nevertheless, a considerable number of the cases that come to those of us who practice in these localities have originated inland. We frequently find that a person having developed the disease in any given locality will be relieved of it by a change to some other locality, though the latter may be either dryer or more moist than the original residence. I know many that are afflicted with the disease upon the shores of Lake Michigan, who, upon going but a few miles into the country are at once relieved. I have known those who could not live with comfort on the sea shore to have but little difficulty upon the shores of our lakes. I have seen those who have attributed their whole trouble to the sudden and severe atmospheric changes on the borders of our great lakes to become much worse by residence in an equable climate. For example, a patient suffering from a moderate degree of hypertrophic rhinitis went from Chicago to Southern California in hopes of obtaining relief, but there he was unable to breathe through the nose at all, and he was compelled to return to Chicago.

With these conflicting facts before us, how can we determine what climate to recommend to our catarrhal patients? We have observed that as a rule they do best in a comparatively dry climate not more than one or two thousand feet above the level of the sea, but there are many exceptions to this. Occasional cases are greatly benefited by a sojourn in high altitudes, and I hope to hear from the physicians of this locality what particular phases of the disease improve in Colorado.

By ascertaining in individual patients the season of the year, and the kind of days when they feel most comfortable, we may often be able to judge of the most suitable climate for them. Yet it frequently happens with these cases, as with asthmatics, that the climate must be tried by each patient for himself in order to determine what atmospheric condition is best suited to his disease.

Before sending such cases from home we should try faithfully the methods of treatment which have been found most beneficial by expert laryngologists. If these do not succeed we should recommend a dry or moist climate, according to the kind of weather in which the patient feels best—at an altitude of not more than one or two thousand feet above the sea, or even less than this. High altitudes should be tried only incidentally, as they are not apt to prove beneficial.

My observation, which embraces several thousand patients, leads me to the following conclusions:

A dry atmosphere at a comparatively low altitude will generally be found beneficial in the following diseases:

In rhinitis intumescens, which is characterized by intermittent swelling of the tubernated tissues

with obstruction of one or both nares, and the consequent discharges into the throat.

In simple chronic rhinitis, with or without excessive secretions; providing there is but little irritation of the mucous membrane.

In atrophic rhinitis with excessive muco-purulent discharge, with but little tendency to drying.

In such cases of hyperæsthetic rhinitis as improve during the dryer portions of the year. However, most cases of hyperæsthetic rhinitis will be more benefitted by an equable climate even though the atmosphere be loaded with moisture.

A high and dry atmosphere is usually prejudicial in rhinitis intumescens and in atrophic and hypertrophic rhinitis, and indeed in all catarrhal affections occurring in patients of nervous temperament. These injurious effects may be ascribed partly to the dryness of the atmosphere, partly to the irritating dust often found in high altitudes, and partly to the effects of the rare atmosphere upon the nervous system which undoubtedly has much to do with the etiology of catarrh.

A high and dry atmosphere may be expected to prove beneficial in cases where there is excessive secretion with little or no nervous irritability; in some cases due to syphilis, and in exceptional cases of atrophic rhinitis with excessive secretion.

In inflammatory affections of the *larynx* we may expect benefit at a low altitude with a dry atmosphere; in simple chronic laryngitis, and in some cases of tubercular laryngitis. In the latter, however, I prefer an altitude of from 1,500 to 2,500 feet, and there is no objection to the atmosphere being impregnated with the odors of pine and fir which the laity consider of so much importance; but I doubt whether these are of any benefit.

In cases of laryngitis with deficient secretion, or excessive irritability of the mucous membrane, the moist atmosphere of equable climates is generally preferable.

A high and dry atmosphere is usually injurious to persons suffering from chronic laryngitis, but it is beneficial in exceptional cases. My observation, however, does not enable me to decide what cases will be improved by this condition. But it seems probable that benefit would be derived in certain cases of simple laryngitis in phlegmatic patients; in some cases due to syphilis in which the mucous membrane requires stimulation, and in exceptional cases of tubercular laryngitis, in which the beneficial effects of the atmosphere upon the constitutional disease more than counterbalance its deleterious influence upon the local affection. The latter are most likely to be found in patients in whom the mucous membrane of the larynx is not very sensitive. In laryngo-pulmonary tuberculosis patients usually do best at an altitude of from 1,500 to 2,500 feet, in a warm and dry atmosphere, but it is often difficult to

determine what is best for them because of the beneficial effects of high altitudes on tuberculosis of the lungs and their baneful effects on the same disease affecting the larynx.

The injurious effects of such an atmosphere on the larynx are often attributed to the dust which it contains, but the explanation is unsatisfactory, for in persons who are continually inhaling much more dust, in planing mills or machine shops, the injurious effects are oftener manifested on the lungs than the larynx.

It seems probable that the action of this atmosphere on the mucous membrane of the upper air passages is not very dissimilar to that of the wind and sun upon the skin unused to exposure.

Owing to its dryness it causes rapid desiccation and destruction of the superficial epithelial cells with consequent irritation of the subjacent tissues, which in addition to the increased flow of blood to the part, resulting from diminished air pressure, necessarily increase the inflammatory action.

70 State Street.

THE CLINIC.

A CASE OF EXOPHTHALMIC GOITRE.

A Clinical Lecture delivered at the Hospital of the University of Pennsylvania.

BY JAMES TYSON, M.D.,

PROFESSOR OF CLINICAL MEDICINE.

Our patient, a woman, aged 44, was born in Ireland, and is a servant by occupation. Her family history has no bearing on the present disease. Up to three years ago she had good health; at this time she became ill with rheumatism and was confined to her bed for a month. She recalls her knee as being badly swollen. At this time, too, she noticed for the first time a lump growing upon the front of her neck, first in the median line. With this she experienced a choking sensation, especially when she swallowed; but occasionally at night, when lying down, she noticed the same disagreeable symptom. At first the swelling increased slowly, but for the last year it has grown rapidly. As early almost as she noted the swelling she observed that her eyes began to protrude. Her weight at the outset was 160 pounds; it is now but 84, a loss of 76 pounds. The swelling is now on both sides of the neck and nearly symmetrical. The hand placed on it it detects not only a pulsation, but a thrill, more noticeable on the left side of the tumor. The eyes are also equally protruded, and show a large amount of the white. This produces the staring effect which you all notice; she can, however, still cover both eyeballs with her closed eyelids. These two most conspicuous symptoms, the goitre and exophthalmos, give the name to the disease of "exophthalmic goitre." But it is also

called "Grave's disease," and "Basedow's disease," from two observers who early described it. Another symptom noticeable with the thrill in the patient is the frequent pulse, which is also essential. At this time it is 122.

As to the exophthalmos, in addition to the varying degree there is also this less constant feature, first pointed out by von Graefe, and known as the Graefe symptom, viz.: a want of coördination in the motion of the upper eyelid and that of the eye. In health, when the eye is raised or cast down, the upper lid follows it. This does not occur when the Graefe symptom is present. This symptom is said to be diagnostic, and even to occur early in the disease; but it is not constant, and is not present in the case before us. The acceleration of pulse is rightly called essential, because it is always present. It is seldom less than 100, but rarely exceeds 140. In certain cases, however, it is said to have reached 200. Equally constant is dilatation of the blood-vessels, although not always as conspicuous as in this case. There is no corresponding rise of temperature. The three essential symptoms may therefore be said to be goitre, exophthalmos and frequent pulse. In order of appearance, the goitre is generally first noticed; the exophthalmos is next, while the palpitation may not be noticed for some time. The disease generally develops slowly, and these three distinctive symptoms may appear nearly simultaneously. The goitre in itself is in no way peculiar. It is usually of moderate size, not reaching the dimensions of the uncomplicated goitre. The tumor is largely contributed to by the vascularity of the part; although there is also an overgrowth of the glandular tissue of the thyroid gland. Other symptoms also exist. Hypertrophy of the left ventricle is one of these, but it is also absent in our own case. The heart's boundaries do not extend abnormally, although its beat is strong and forcible. The normal rhythm is also preserved; but arrhythmia occasionally occurs. A cardiac murmur is sometimes present; there is here evident mitral systolic murmur, heard less distinctly at the base. These murmurs are often hæmic, for these patients being often anæmic, furnish the conditions of the hæmic murmur. Another frequent symptom is the presence of what is termed "nervousness;" the patient is restless, quick, irritable. This may also show itself in the shape of tremor, either of a part or of the whole body; thus the legs or arms may be affected, or even more limited muscle areas. Sweating, sometimes unilateral, should be named as an occasional symptom.

Exophthalmic goitre is more common in women than in men, according to Trousseau, as 50 to 8. I do not remember having seen a case in a man. It is also more common in the young adult and middle-aged. This woman, who has been ailing for three years, was 41 before she

showed symptoms of this disease; she is the oldest patient with this disease that I have seen.

The relation of the symptoms to each other is difficult to determine. Indeed, there seems to be none, for they are rather the result of a common cause. What this cause is, is not known with certainty; but its nervous nature is generally conceded. Of the three great nervous masses, the brain, the spinal cord, and the sympathetic system, the latter seems the more likely centre of disturbance. Whether the change is one of paralysis or irritation is difficult to decide; each view serves to explain a number of points in the symptomatology of the disease. I am inclined to regard it as a vaso-motor paralysis. The dilatation of the blood-vessels of the thyroid gland and the exophthalmos are equally well accounted for from this standpoint. The eyes are protruded because the blood-vessels posterior to them are dilated and push them forward. The sweating which sometimes occurs is also thus easily explained. The increase in the frequency of the pulse would not be explained by paralysis, but by irritation of the sympathetic system. Such irritation would cause the heart to beat more rapidly; it would not, however, explain the exophthalmos.

As to prognosis, sooner or later most cases improve and some get well. Exophthalmic goitre is rarely fatal in itself; the opportunity for autopsies generally occurs when the patients die from other diseases. Occasionally the condition remains permanent, but in time the majority of cases get well, or at least improve vastly. I have a case under observation; a young woman who, ten years ago, had exophthalmic goitre, who is now well except that her eyes are slightly more prominent than is strictly natural; strangers would not notice it at all.

Whatever irritates or in any way produces a serious impression on the nervous system may cause exophthalmic goitre, such as shocks, trials, anxieties, sudden reverses of fortune; but we cannot ascribe any definite cause to the trouble. Here we are as much in the dark as elsewhere in the study of the disease. However, it is to be remembered that rheumatism is to be included among the causes, and our patient, who has had much rheumatism, may owe her trouble to it.

The treatment is directed to the symptoms mainly. The remedies most used are the bromides and digitalis; digitalis to slow and steady the pulse; the bromides for two reasons: first, as nervous sedatives; and secondly, for their reputed action in producing anæmia of the nerve-centres. In some cases, where there is no cardiac lesion and the pulse is good and strong, aconite with the bromides is of service. Ergot, for its power of contracting the calibre of blood-vessels, is also a rational remedy. This woman has been on carbonate of iron, ergot and digitalis. There is

a difference of opinion as to the propriety of administering iron. I believe the decision should be based on the condition of the patient and the presence or absence of anæmia. By German writers, galvanism of the sympathetic is claimed to be of service. The English physicians have not been so fortunate in its use. Theoretically it should be of service, and we will try it along with the other measures. A constant current of from five to eight cells is used; the negative pole is placed on the fifth cervical vertebra, the positive pole along the sternum. Up to the present our patient has improved under carbonate of iron, two grains at a dose, digitalis and ergot each one-half grain.

MEDICAL PROGRESS.

BACTERIOLOGICAL STUDIES IN SCARLATINAL ANGINA.—WURTZ and BURGERS (*Arch. de Med. Exp.*, May, 1890) have recently made some observations in this line that are of some practical importance. A few cases of scarlatina, in the Trousseau Hospital, were transferred to the pavilion for diphtheritics because of early development of false membrane in the throat. The bacteriological examination in all these cases revealed the streptococcus pyogenes, in a pure state, or associated with other microbes of suppuration. In none of the cases with early developing membrane did the authors find the bacillus of Klebs-Löffler. In two cases of angina with late developing membrane the specific bacillus was found to be present. One of these children that early presented the streptococcus pyogenes was undoubtedly secondarily infected in the pavilion for diphtheritics, to which it had been transferred.

The authors come to the conclusion, that the precocious angina of scarlatina is not, in the great majority of instances, of a diphtheritic nature, notwithstanding the gravity of the symptoms. It is important to differentiate these conditions and not send these patients among the diphtheritic, where they may contract a much more formidable disease.

CONDITION OF THE HEART AFTER DEATH.—The old statement that in death from respiratory failure the right ventricle was filled with blood and the left empty, while in death from heart failure the left ventricle is filled, has recently been questioned, and STRASSMANN (*Vierteljahrsschrift für ger. Medicin*) has added a series of experiments to the literature of the subject. Dogs were killed with prussic acid, blows, stopping the trachea, strychnine and hæmorrhage. The heart was examined immediately after death, and in cases of primary heart failure (also when death was caused by a blow), the left side of the heart

contained more blood than the right. In death from acute asphyxia the reverse was found. It is important that in no case, in any form of death, was the heart found in systole on immediate examination. The right and left ventricle were in diastole, soft and filled with blood, even in cases of strychnia poisoning.

In the later examinations, twenty-four hours after death, the conditions were greatly changed. When *rigor mortis* sets in the left ventricle empties itself and strongly contracts, even in cases where death was caused by heart failure, and at first the ventricle was soft and overfilled. These phenomena are present in the right side of the heart to a less degree, owing to the weaker musculature.

In those cases where *rigor mortis* is present and the ventricle soft and overfilled, the author thinks there is degeneration of the heart muscle. This condition was noted in two of the animals used for experiment: One was suffering from some infectious disease and the other died from prolonged chloroform narcosis.

From the experiments of this writer we are justified in receding from the position of the older authorities that the condition of the heart as found *post-mortem* is an index of its condition at the time of death. It is doubtful if the older observations of death from respiratory failure or heart failure are of any value, as the condition of the ventricle seems to depend upon the time that has elapsed since death.

CANNABIS INDICA IN GASTRIC DISORDERS.—

A very useful contribution to our knowledge on the treatment of the various varieties of indigestion is published in the *Deutsche Medicinische Wochenschrift* of August 14 and 21 of this year, by DR. G. SÉE, who, as stated in our Paris correspondent's letter of last week, has dealt with the same topic before the Academy of Medicine. After a full discussion of the forms of indigestion that are recognized, and the use of cannabis indica in their treatment, Dr. Sée arrives at the following conclusions: 1. The most convenient form in which to employ the drug is the extract, in doses of about $\frac{3}{4}$ gr. daily, divided into three portions. Above this dose the drug is apt to produce unpleasant effects. (The French extract is stronger than the English.) 2. The drug was chiefly tried on the non-organic affections of the stomach. These were divided into two groups. The first included cases in which the gastric juice was altered in composition, especially if there was an excess of hydrochloric acid. The second group consisted only of cases of gastro-intestinal neuroses, in which there was no change in the digestive juices. 3. All these affections—dyspepsias and neuroses—were characterized by five sets of symptoms, occurring in various proportions. (a) Pain, local or radiating, arising spontaneously or

after food. The variations in appetite belong to this group. (b) Atony of the stomach, with or without dilatation, is almost always present. Vomiting is more frequent in the neurotic cases. (c) Flatulence and eructation occur in most cases; in the neuroses the gas consists chiefly of air which has been swallowed; gases formed by decomposition arise from lactic or acetic acid fermentation, and not from excess of hydrochloric acid. These gases are the cause of the painful symptom known as "heartburn." (d) The gastric digestion of flesh food and albuminoids is little affected when hydrochloric acid only is in excess, but it is deficient when too much lactic or acetic acid is present, and completely in abeyance when there is deficiency of acid. In the neurotic cases gastric digestion is normal. Constipation is the rule in most cases. (e) In this last group are placed the varied symptoms—giddiness, migraine, palpitation, agoraphobia, etc. 4. Cannabis indica gives relief from pain and increases the appetite in all cases, no matter on what causes the pain and loss of appetite may depend. If, however, too much hydrochloric acid be excreted, it is better to aid the action of the drug by large doses of bicarbonate of soda, given about four hours after food. Cannabis indica has no beneficial action on the atonic state of the stomach, but it relieves vomiting and cramp of the stomach. The drug has no direct influence in checking flatulence, but it aids the expulsion of the gas and diminishes heartburn. The digestion of food is improved, if the failure depends upon neuro-paralytic conditions, or is rendered painful by an excess of acid, but no improvement is produced if the disorder is caused by a want of acid. As regards the other symptoms—giddiness, sleeplessness, palpitation, and the like—some relief is generally experienced by the use of this drug, but no alteration for the better is noticed in the hypochondriacal, hysterical, or neurasthenic conditions. In short, cannabis indica may be said to be a true sedative to the stomach, without causing any of the inconveniences experienced after the administration of opium, chloral, or the bromides. It should be combined with the use of alkalies in large doses and with mild aperients.—*Lancet*.

PERIODICAL PARALYSIS OF THE FACIAL AND ABDUCENS.—Periodically recurring paralysis is an exceedingly rare affection, and one that is most difficult of explanation. It is not long since Moyer and Hinde reported a typical case of periodical oculo-motor paralysis, and now we have an account of a similar paralysis, in other motor nerves, from the pen of NIEDEN (*Centralblatt f. prakt. Augenhekte*). The patient, a woman 36 years of age, of good health, free from syphilis, and who had borne seven healthy children, was taken in January, 1884, with a severe pain in the back of the head and spasm of the right side of

the face. Suddenly the left half of the face became paralyzed, which after a time disappeared. Fourteen days later it returned, but yielded after four weeks' treatment with electricity and iodides. In April, after severe headache, the external rectus became paralyzed, and eight days later difficulty in speaking and chewing developed. When protruded the tongue turned to the left. Sensibility of the tongue, and taste normal. The paralysis of the sixth nerve and tongue disappeared after six weeks. In June, 1887, again after confinement, paralysis of the right facial nerve took place, preceded for some weeks by severe headache. This attack disappeared in four weeks. In February, 1889, after severe headache, paralysis of the right adducens, and light left-sided facial paralysis. Recovery in eight weeks. In May, 1890, complete right facial paralysis. This last attack was, like the others, preceded by pain that ceased as soon as the paralysis developed.

The author remarks that in this rare case it is probable that changes are present in the nuclei of the facial and abducens, though the nature of such change is purely speculative.

DIURETIC ACTION OF MILK SUGAR.—Milk and buttermilk have long been recognized as excellent remedies in treatment of diseases of the kidney. It is not long since Sée announced the diuretic properties of milk sugar and recommended its use in dropsy dependent upon heart lesion. His observations were soon confirmed by Dujardin-Beaumetz. We have recently had additional confirmation from the pen of DR. ZAWODSKI (*Deutsche Med. Ztg.*) who employed this treatment in a severe case of dropsy with excellent results. Unlike Sée and Beaumetz, he made no change in the diet of the patient and allowed him to take fluids. The dose also was lessened to 12 to 18 grams a day given with a considerable quantity of milk, that contained at least 50 grams of milk sugar.

The author thinks that this substance is to occupy a prominent place among the diuretics, as it is easily administered, agreeable in taste and of low cost.

REMOVAL OF BREAST DURING HYPNOTIC SLEEP.—DR. SCHMELTZ, of Nice, has recently (*Gazette Médicale de Strasbourg*, July 1) recorded a case in which he removed a sarcomatous breast during anaesthesia caused by hypnotism. The patient was a girl, aged 20, who was easily thrown into the hypnotic state. The operation was performed in the presence of Drs. Lauza and Barriera, and the entire organ, together with the aponeurosis of the pectoralis major was removed by the oval incision. Five drainage tubes were inserted and the wound was closed with thirty-two-metallic sutures. The operation lasted an hour. The patient remained absolutely insensi-

ble, in a condition of the deepest anaesthesia, such as is only seen after large doses of chloroform. Dr. Schmeltz says: "I operated very slowly and quite at my ease; the patient even tried to encourage me by her words; she seemed very gay, and laughed loudly from time to time as if to show that she felt no pain. In order to make the operation easier for me, she turned herself about so as to place herself in the most favorable position, keeping her right arm stretched out so that no assistant was required to keep it steady." She was kept under observation the rest of the day, and having been told not to feel pain and to have a good night, she obeyed these instructions in the most docile manner. The wound was completely healed on the fifteenth day. The only symptom worth mentioning, which Dr. Schmeltz observed in the patient during the operation, was great pallor of the countenance, without any dilatation of the pupil or weakening of the pulse. The tumor weighed 2 kilograms.—*Brit. Med. Journal*.

RELATIVE VALUE OF DIFFERENT METHODS OF TREATING UTERINE MYOMA.—M. R. PICHERIN (*Gaz. des Hôpitaux*) has recently made a careful study of the different methods of treating uterine myoma. He classes castration as among the palliative remedies, while he considers it quite as dangerous as the radical hysterectomy. The principal objection to the removal of the ovaries in these cases is that in all cases it does not bring on the menopause, it does not constantly reduce the size of the tumor, that it is a dangerous and often difficult operation, with a mortality of nearly 14 per cent. In conclusion he says, that the great operators are not agreed upon the indications for oöphorectomy, and he therefore comes to the conclusion that hysterectomy, as it is quite as safe, should be preferred in the majority of instances. The writer speaks warmly of the electrical and medicinal treatment of fibroids, and says that the radical operation should only be thought of after these have been faithfully tried.

GASTRO-HYSTROPEXY.—M. Pozzi performs hysterorrhaphy after certain modifications introduced by himself. The uterus having been exposed and brought forward till it touches the abdominal wound, a continuous silk suture is passed through the posterior sheath of the rectus close to its cut edge on the left side, the peritoneum, and the uterus in the middle line, and hence to the peritoneum and sheath of the rectus on the right side of the wound. The uterus is transfixured three times in this manner, the needle passing a short distance under the serous coat, further in the uppermost than the lower points of the transfixion. The suture is finally tied and cut short. The more superficial layers of the abdominal wound are sutured separately. M.

Pozzi described two cases of retroflexed uterus bound down by adhesion where this operation was performed, in the *Annales de Gynécologie* for June, 1890. The first case was a complete success. Alexander's operation had already been attempted without giving relief. In the second there was suppuration of the lower part of the wound, which the operator attributed to the fact that the silk suture had not been sufficiently boiled. The uterus in each case remained firmly fixed to the parietes. M. Pozzi prefers the continuous sunken suture to the interrupted suture passed outside the integuments, and removed on or about the fifteenth day after operation, as practised by Leopold, who considers that a relatively loose adhesion is sufficient.

THE BACILLUS OF PURULENT URINE.—Some experiments have been made in the laboratory of Prof. Strauss, in Paris, by Dr. KROGIUS, on the puriform urine of ten patients suffering from chronic stricture, with catarrh of the bladder and pyelo-nephritis. In one of these cases a bacillus was found of rather polymorphous appearance, resembling a small mobile pencil with rounded ends. The bacillus was from 1.8μ to 3.6μ in length, with a breadth equal to one-third of its length. When cultivated the length became considerable, but it developed no spores. It was easily dyed by aniline, but with equal facility decolorized by Gram's method, and it liquefied gelatine. At a high temperature it developed most peculiar colonies. They were distinguished by a strong characteristic odor resembling that of purulent urine. The development of ammonia was very marked. The bacillus very quickly decomposes urea into carbonate of ammonia and water. When newly cultivated and injected in doses of $\frac{1}{2}$ cubic centimetre into the subcutaneous connective tissue, veins, or peritoneum of rabbits, it often caused death in two hours, and never took more than two days to act fatally. Older bacilli are still more poisonous. The puncture shows first œdema and redness, and then the epidermis becomes gangrenous, with an ammoniacal odor. The animals themselves are, in a few hours after the injection, in a state of high fever, prostrated, and suffering from profuse diarrhoea, and ultimately coma comes on, during which they sometimes die in convulsions. The bacillus is called by the author "liquefaciens septicus."—*Lancet*.

A NEW OPERATION FOR CANCER OF THE RECTUM.—DR. AXEL IVERSON, of Copenhagen, presented a communication on this subject to the Tenth International Medical Congress, as follows: One can never know with certainty whether the disease is limited to the rectum or whether the neighboring glands are also involved, and it is difficult to settle the question as to whether an

operation is indicated. Colotomy will relieve for a certain time, and often, indeed, for a long time, the symptoms dependent upon the co-prostasis, but it does not help the pain nor reduce the foetid secretion. The want of a more radical operation for the relief of this terrible disease is therefore still urgently felt. It is known that cancer of the rectum often remains stationary for a long period, and the author had made autopsies on 47 long-standing cases, in 21 of which there had been no metastasis. This fact gives hope of success from a radical operation. In judging of the latter we need not consider the direct mortality so much as the tendency to a return of the disease. The author then presented statistics of 247 cases of operation for rectal cancer performed in the Scandinavian countries, which showed only a very small number of patients who had survived the operation for several years without having had a local relapse. The results of extirpation were slightly better, as regards prolongation of life, than those of colotomy, but they were little or no better in respect to relief from pain. The author then spoke of the different methods at present in favor, showing wherein they were defective. He thought too great an effort had been made to preserve continence of fæces, and the operations therefore had not been radical enough. The surgeon should not hope for too much—the essential thing is to make the operation a radical one. A partial operation should be undertaken only when the disease is strictly limited to the anus. In every other case, if one is to operate at all, it is necessary to perform total extirpation of the rectum, making a permanent artificial anus in the sacral region. Unless this is done, it will be impossible to remove all the glands which are liable to be infected. The extirpation of the tissues surrounding the intestine is also necessary, as here are often located the "seedling" cancers. The operation is performed as follows: After a preliminary Kraske operation, with or without resection of the sacrum, oval incisions are made surrounding the anus, and then the rectum is dissected out from below upward, care having been taken to tie a ligature around the anus in order to prevent escape of the contents of the gut. All the pre-sacral connective and adipose tissue is then removed. Next the peritoneum is opened and the intestine drawn down. Now the intestine and the parietal layer of the peritoneum are stitched.—*Medical Record*.

BACILLUS OF WARTS.—A bacillus has been found in the "prickle layer" of common warts by Dr. KUEHNEMANN (*Monats. für Prakt. Derm.*) It is described as very slender and delicate, occurring both in and between the cells. This fact would account for many curious phenomena which have been noted in regard to these tumors.

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ABSORPTION BY THE SKIN.

It has been repeatedly held that the sound skin will absorb substances in watery solution, and again it has been denied. The teaching of our standard text-books for the past dozen years has been that of PARISOT, who said that the skin was unable to absorb any substances from watery solutions, and that this was due to the fat nominally present in the epidermis and pores of the skin. According to RÖHRIG all substances which act upon and corrode the skin, are capable of absorption. This fact was later confirmed by RITTER and PFEIFFER, who found that salicylic acid was rapidly absorbed when brought in contact with the skin, and other substances brought in contact with a part previously treated with salicylic acid, rapidly entered the circulation. The experiments of these writers would seem to be conclusive as to the impossibility of substances passing through the sound skin. In only one instance out of five did they succeed in detecting iodide of potassium in the urine when a salve containing 10 per centum of that drug had been rubbed into the extensor surfaces of the arm and leg. In the instance where it was absorbed, it had been in contact with the part for four days, and the rancid fat had probably disorganized and softened the epidermis.

Recently, other writers have busied themselves with this vexed question, notably KOPFF, who plunged a portion of the body in a solution of sublimate with potassium iodide, and recovered these substances from the urine. M. STAS ex-

perimented in a similar way with arseniate of potassium, with negative results.

A late number of the *Gazette Médicale de Liege* contains an abstract of the experiments of DR. KILLER, who sought to solve the problem by estimating the amount of chlorine excreted in a given time upon a fixed diet. The first experiments were with full warm baths containing 6 per cent. of sodium chloride. The results were as follows:

Before the baths (3 days)	.....	1.605.
During " " (7 " )	.....	2.108.
After " " (2 " )	.....	1.431.

A second series of ordinary baths (not salt) gave:

Before the baths (2 days)	.....	1.750.
During " " (3 " )	.....	1.177.
After " " (2 " )	.....	2.291.

A third series with salt showed practically no change in the amount of chlorine excreted by the kidneys before, during, or after the baths. As the author says, even the favorable second series does not prove cutaneous absorption, as the baths may have modified elimination of sodium chloride by the tissues. To avoid this source of error he chose the iodide of sodium, a salt not normally present in the body. Of eighteen trials with this substance, eight were negative, and in two of the positive cases one was where the arm plunged into the solution contained a small blister, and in the other, a full bath; it is possible that absorption may have taken place through the natural orifices.

In conclusion we can say that recent experiments only go to confirm the views of older writers, that absorption of substances in watery solution is practically impossible with a sound epidermis. Substances that corrode or soften the epidermis will aid absorption, and the prolonged application of water will macerate the epidermis and in that way admit substances to the circulation.

THE AMERICAN MEDICAL ASSOCIATION IN RELATION TO ORIGINAL SCIENTIFIC RESEARCH.

In the editorial columns of THE JOURNAL of June 14 we referred to the necessity of the creation of a special Section to consider papers presenting the results of original investigation, or of the adoption of some means to encourage such work. The special advantages that THE JOURNAL possesses for the dissemination of the results

of original work are so manifest, when compared with the limited circulation of the reports of hospitals, laboratories, or special societies, that any discussion of that feature of the question is supererogatory. And in an editorial article in *THE JOURNAL* of August 2, we presented the desirability of more intimate relations between the work of State Medical Societies and that of the American Medical Association, and we may consider this subject as a means to attain such an end. In a leading article in the *New York Medical Journal* of August 16, on "The Relation of American Medical Societies to Scientific Research," the point is made that aside from an occasional scholarship at some university, or the various prizes that are offered for the "best essay, etc." any of our physicians that may desire to undertake some special investigation are compelled to purchase their own chemical or physiological apparatus as well as the material necessary to pursue the investigation. It is urged that the desideratum is means with which the requisite appurtenances may be purchased for competent investigators that can ill afford both time and money; and the suggestion is made that the numerous American medical societies imitate the British Medical Association and allot certain sums of money to qualified physicians to purchase what may be needed to make some special investigations.

It may be information to some of our readers that the British Medical Association, according to their *Journal* of July 26, in 1889 allotted twenty-five hundred dollars, in sums of from fifty to two hundred and fifty dollars, to members in various portions of Great Britain for expenses necessary in making original research.

At present the finances of the American Medical Association do not justify such a diversion of its funds; though the highest aim of our organization must necessarily tend to the realization of measures to encourage and foster original research. But a number of the State Medical Societies have an accumulated fund that could be used, under the direction of a judiciously selected committee, for such purposes. If, instead of the large annual volumes of *Transactions* published at considerable expense to the Society, the latter would confine its publication to the *Official Transactions*, referring such papers as a publication committee recommends to *THE JOURNAL*, the working

expenses of the State Societies would be diminished, consequently more money could be utilized for the purpose we are considering, and a more intimate relation would be established between the State Associations and the American Medical Association.

Such a plan would involve no diminution of the autonomy of a State Society; it would permit many qualified physicians undertaking experimental research who are now deterred by the attendant expense of these investigations; it would give the scientific papers of the State Associations an audience that volumes of *Transactions* do not reach; and well conceived original work would redound not only to the benefit of humanity but to the credit of the investigator, the State Association, and the reputation of American medical science.

A SOUTH AMERICAN QUARANTINE.

The establishment at the mouth of the Rio de la Plata, in Uruguay, used in part as a quarantine station, is a strange combination of hotel, prison, military camp and seaside resort. It is situated on the Flores island, the sovereignty of which is vested in the Republic above named. In the summer months, everything that comes from the neighborhood of Rio de Janeiro is under the ban, on account of the dread of yellow fever, and every person from that port is detained until ten days shall have elapsed from the time of sailing. A single boat-load may comprise from 300 to 600 visitors. Although the accommodations at this Grand Quarantine Hotel are poor the people who journey that way must stop there until the specified time has expired. There are all classes of passengers, as first class, immigrants, traders, officials and the like. When the crowd arrives at the hotel, it is sorted out and packed away, entirely at the mercy of the management, since it is the only place on the island where shelter can be had. A permanent garrison is maintained, and it includes a commandant, surgeon, State's secretary, postmaster, lighthouse keeper and telegraphists. Every morning, during pleasant weather, a tugboat comes over to the hotel from Montevideo, with the mails and provisions. When a "norther" prevails, the tugboat does not come, and inasmuch as the storm may continue as long as five days, the stock of supply may fall to near-

ly the starvation point. As one visitor writes: "Think of stopping at the largest hotel in the world and not being able to get more than one or two meals a day, with bananas for one of the meals. This was during a storm that lasted five days, and there were fully a thousand guests on the island at that time." Protests addressed to the officials are unavailing—they are a little autocracy all by themselves—and patience for those few days is the best and only remedy for the disagreeable situation.

EDITORIAL NOTES.

RECOGNITIONS OF MERIT.—Rush Medical College is fortunate in bringing to its Chair of Physiology the services already so valuable and so full of promise in the future as are those of Dr. Harold N. Moyer. Dr. J. A. Lydston will be a valuable accession to the Faculty of the Chicago College of Physicians and Surgeons as Professor of Chemistry.

SPERMINE.—Dr. Pohl, of St. Petersburg, writes to *Le Mercredi Medical* that he believes that the crystals found in the seminal fluid, as described by Schreider, are the phosphate of an organic base called spermine, which is identical with ethyleneimine, according to Laderberg, and Obel. Pohl has extracted spermine from the testicles of young rabbits, and has used it experimentally. He has observed that it decreases the action of the heart, while it increases the general energy and stimulates the nervous and genital systems. He thinks it probable that castoreum and musk owe their nervine properties to the spermine which they contain. The crystals of the phosphate of spermine have been named the Charcot-Neumann crystals. Ethyleneimine is an artificial product which is isomeric with spermine. Possibly, also, some of Brown-Séquard's results may find their explanation in the hypodermic injection of this leucomaine, spermine, or some other similar substance, which can, in the future, be isolated and definitely described.

THE HYGIENIC ARREST OF LEPROSY.—Dr. Sandreczky, of Jerusalem, has described his treatment of a case of leprosy, which has been under observation four years and which he thinks may fairly be said to be "cured." After two years of treatment the progress of the malady appeared to be stayed; there has been no relapse and all signs

of the disease have disappeared excepting the atrophy of the hands which, of course, is permanent. The case, as given in *Monatshefte für praktische Dermatologie*, was that of a child whose family history was free from leprosy. The treatment was directed principally upon lines of general hygienic management, such as open air exercise, massage, bathing, iron and quinine; the baths were varied with green soap, sulphur, iron or salt, the water being very hot, and free perspiration being promoted by means of proper coverings over the body after each bath. The tubercles were treated by chrysarobin, green soap or iodine, without any manifest benefit.

A POLICLINIQUE AT PARIS.—An institution has been opened at Paris, which bears a close resemblance to the post-graduate schools of the United States. It is located at No. 28 rue Mazarin, as a dispensary and teaching institution, under the title of the Polyclinique de Paris, and is designed to become a centre for practical medical teaching.

THE proceedings of the recent Berlin Congress, which include more than 200 addresses and discussions, will be published in full in a large work, which will appear in separate parts. It is expected that the first part will be ready in the course of the autumn.

A BILL making vaccination optional in Holland has been introduced into the legislative chambers by the Dutch Government. The Minister of the Interior is said to be a member of the Anti-vaccination League, but it is not thought at all likely that the proposal will be adopted by the States-General.

CLINICAL TEACHING AT MOSCOW.—Extensive additions have recently been made to the buildings used for the purposes of clinical teaching at Moscow, and the medical faculty of that University is now of the best equipped in Russia. The Imperial Treasury provided funds for the erection of a University Clinic, and private munificence furnished the means of building clinics for mental diseases and gynecology, and for the instruction of midwives. All these will be officially opened at the beginning of the scholastic year, and a new clinical hospital will also be opened in January, 1891. The total superficial area of the new clinics is 20,000 square feet. In addition

to these new buildings, a children's hospital is in course of erection close to the University Clinic, and will be opened this autumn.

CHOLERA.—Cholera has broken out at Massowah, and the deaths there number fifty daily. The outbreak is stated to be among native tribes under Italian protection. The troops and European residents are free from the disease. A sanitary commission is on its way to Massowah with medicine and disinfectants. Cholera appeared at Aleppo on September 12. In the beginning of September cholera decreased in Spain, but recently there has been an increase in the cities of Toledo and Valencia, and the epidemic has reappeared in villages of the provinces of Albacete, Alicante, Castellon, Tarragona and Toledo, where it had subsided. The city of Valencia still has a high rate of mortality.

MICHIGAN BOARD OF CORRECTIONS AND CHARITIES.—At a recent meeting the Board passed the following resolution:

Resolved, That this Board advise the Boards of Control of the Asylums, Prisons, Reformatories, the State Public School, and Industrial School for Girls, the Institution for the Deaf and the Blind, to appoint a consulting medical staff consisting of a surgeon, ophthalmologist, aurist, neurologist and gynecologist, in connection with each institution, excepting those to which males only are admitted, where a gynecologist will not be needed. That these officers be known as consulting surgeons, aurists, etc., in the records of the institutions; that they be paid only for visits to the institutions, and that those visits be subject to the call of the superintendents, wardens, or other chief officers, or the Board having the institution in charge.

THE late Sir Munguldass Nuthoobhoy, C.S.I., of Bombay, by his will directs his executors to build, on land adjoining the sanatorium which he founded, a bungalow, to be used as a dispensary, for which purpose he bequeaths 10,000 rupees, and for its maintenance 30,000 rupees. To provide a Hindoo licentiate as a medical officer he gives 30,000 rupees, and for the maintenance of the sanatorium 10,000 rupees.

A HEAVY SUIT FOR DAMAGES.—A libel suit for \$200,000 has been entered by William Radam against the *Druggists' Circular* of New York. Radam is the manufacturer of a much advertised microbe-killer, and his alleged damages are for the largest amount, so far as heard from, that has ever been asked in a suit of this nature. The allegations of the complaint show that the business of the said Radam has been damaged by an ar-

ticle published in the *Circular* in September, 1889, which gave the result of an analysis of the "killer," said to have been made by Dr. R. C. Eccles, of Brooklyn, who is one of the recently elected members of the Committee of Revision of the Pharmacopœia. Dr. Eccles stated in that article, that an identical preparation could be made by the following formula:

Oil of vitriol, impure, 4 drachms,
Muriatic acid, impure, 1 "
Red wine, about 1 ounce,
Well or spring water, 1 gallon.

This mixture can be made at a cost of less than five cents per gallon, while a gallon of the original fluid was usually sold at three dollars. It was further alleged that, while muriatic and sulphuric acids, the principal ingredients of the nostrum, could be properly prescribed, by professional advice, as medicines, yet when taken without due caution and counsel tended to become a hurtful poison; and that the theories of the said Radam, as to the cause and treatment of diseases, were asserted to be entirely erroneous. Colonel Robert G. Ingersoll, the renowned lawyer and lecturer, has undertaken the cause of the plaintiff. The proprietors of the *Circular* have expressed the desire that any physicians, who have observed unfavorable results from the use of the "killer," or other facts, interesting under the circumstances, will communicate with them. They claim that their publication of Dr. Eccles' analysis was without malice, and for the furtherance of the health and welfare of the general public, as against a nostrum dangerous alike in design and practical results.

ON August 2 the King of Italy signed decrees relative to the organization of "municipal laboratories of hygienic vigilance" throughout Italy for the examination of foods, beverages, etc. These laboratories must comprise at least two departments—namely: a "medico-micrographic" and a chemical one. They are to be under the direct control of the Minister of the Interior.

THE next quarterly meeting of the newly-formed Association of Massachusetts Boards of Health will be held in Worcester October 15. The subject for discussion will be sewage and its treatment. Dr. L. P. Kinnicut will read a paper on that subject, which will be followed by discussion. Upon invitation of City Engineer Allen the members of the Association will pay a visit of inspection to the new sewage purification works at Quinsigamond. It is expected that several sewage experts from Boston and other cities will join the inspecting party.

TOPICS OF THE WEEK.

THE "POLYCLINICO" AT ROME.

British medicine has more than its share of interest in this great work, which, when completed, will be an event of European importance. Not only will the grand façade of its surgical department present as its chief ornament the likeness in bas-relief of the English surgeon who discovered the antiseptic treatment, but the whole building, or rather groups of buildings, will bear the impress in almost every detail of British example and British influence. As already shown, the "Policlinico" is due to the inspiration of the leading physician and consultant of Italy, the statesman, scholar, and man of letters, Dr. Guido Baccelli. Thanks to his prudence, energy, and weight in official circles it is steadily advancing to completion, when the monetary crisis of Rome is causing the suspension of other architectural undertakings only less important. The site on which it stands, the south-east of the city, between the Porta S. Lorenzo and the Porta Pia, skirts on its urban side the Prætorian Camp, whence it stretches out toward the Sabine hills over a space of 160,000 square metres, circumscribed by ample approaches thirty metres wide. The architect bears an honoured name in his profession, Giulio Podesti, and has more than fulfilled the expectations he inspired. Under him, again, works Signor Cerebelli as builder, with a "technical office" at his command; while the supreme direction is entrusted to a "commissione governativa," composed of the distinguished surgeon Durante and the equally distinguished physician Bastianelli, with Dr. Baccelli at their head. As one enters by the main approach to the "Policlinico" he is confronted by the "palazzo dell' amministrazione," from which on the ground floor and first floor branch off four great galleries, communicating with all the buildings of which the institution is composed. These consist of three compartments. To the right of the "palazzo dell' amministrazione" is the "comparto medico;" to the left, the "comparto chirurgico;" and at the south-east corner the compartment for infectious and contagious maladies, the laundry, and the "anatomico-pathological institute," with the "camera mortuaria" attached. At the back of the "palazzo dell' amministrazione" are the bath-rooms, the kitchen and the chapel. Every compartment is composed of several clinics, which lie along the principal frontage. To the right, the medical, divided into propædæntic, neuro-pathological, medical properly so-called, syphilitic, and pædiatric, to which is annexed a hospital for patients. This hospital, divided into twenty-two pavilions, accommodates easily 295 patients. The "comparto chirurgico" to the left is distributed into the following clinics: the propædæntic, the aural (otoiatric), the surgical proper, and the ophthalmic; while the "ostetrica-ginecologica" occupies the other corner corresponding to that dedicated to infectious and contagious diseases. This compartment also has a hospital attached accommodating 210 beds for teaching purposes. These clinics accommodate 141 of both sexes; the "comparto chirurgico," as a whole, having 351 beds, and the obstetric

institution 60; so that the entire policlinique provides for 878 patients. The space unoccupied by the buildings is divided by footpaths intersecting parterres, gardens, and fountains. Special operations of transport—as of patients, linen, cadavera—are effected through the immense galleries which place the several buildings in communication. Finally, the "Policlinico" will be provided with every appliance known to the best-appointed hospitals and schools of Great Britain and America, for ventilation, heating, and in the matter of lifts and conveyances for the patients. Dr. Baccelli, with an economic skill not always displayed in such vast undertakings, has succeeded in keeping the outlay, at least so far, within the estimates; which serves to explain the fact that the "Policlinico," which he fondly designates "il mio pomo d'Adamo" (the apple of his eye), as within measurable distance of being *un fait accompli* when other architectural enterprises in Rome are in suspension, if not deferred to the Greek Calends for want of funds.—*The Lancet*.

MODERN EMPIRICISM.

There seems to be a growing danger, which should be recognized and guarded against by students and practitioners of medicine, that physico-chemical research, with the expert inductive reasoning requisite for the application of such research to therapeutics, may result, in consequence of the technical nature of such reasoning, in practice without reasoning; that the rationalism of the few may tend to a form of empiricism in the many.

Few practitioners have opportunities of verifying otherwise than empirically the effects of a new remedy which they "try" on the authority of the physiologist or chemist; hence it follows that in the employment of the newer remedies, there is not now the same familiarity of the workman with his tools which existed fifty years ago in the days of apprenticeship, when an intimate knowledge of the remedies usually employed did not require special training and skill in the higher departments of physiology and chemistry, and when the student was able to master in his course of study the nature and properties of the drugs which were to serve him as the tools of his craft.

This seems to be an inevitable effect of progress in every art, the practice of which is based on advancing science; but it has come to the practice of medicine later than to others.

The popular and commercial names which have to be used for some of the newer drugs, instead of the cumbersome scientific combinations of syllables which indicate their constitution—such as antipyrin, antifebrin, urethane, hypnone, somnal, salol, thallin, etc.—must not be allowed to veil from the practitioner the real nature and constitution of such bodies; and, although it is impossible for the majority to do otherwise than use these remedies somewhat blindly on authority, the attempt must be made to understand the physiological and chemical principles on which the molecular constituents of such remedies are built up, and their efforts combined or neutralized in the many forms of therapeutical agents now produced synthetically in the laboratory of the physiological chemist.—*Cor., Brit. Medical Journal*.

PROHIBITION OF HYPNOTIC PERFORMANCES IN RUSSIA.

The Russian Medical Department has just issued the following circular (*Vestnik Obshchestvennoi Higieny, Sudebnoi i Prakticheskoi Meditsiny*, August, 1890, p. 12):—"In consideration (1) that public exhibitions of hypnotism cause considerable injury to the health of subjects experimented upon as well as of spectators witnessing the experiments, the performances being apt to give rise to the development in hypnotized persons of various hysterical, nervous, and even mental affections, which may sometimes amount to a genuine epidemic of hypnotic mania; (2) that such public hypnotic entertainments offer to evil-minded subjects a good opportunity for studying methods of hypnotizing, and for subsequently practising them for various immoral or criminal purposes; (3) that generally such hypnotic performances, being not accompanied by any rational explanation, can breed in the public only erroneous notions, and even implant superstitions, while post-hypnotic suggestions can constitute a source of disturbance of order and the peace of the community by hypnotized persons, and even of committing criminal deeds by the same, the Medical Council has resolved: (1) That henceforward any public *séances* of hypnotism and magnetism are strictly prohibited; and (2) that the application of hypnotism for medical purposes can be permitted solely to medical practitioners, under the condition that the operation is to be practised invariably in the presence of other medical men." It is scarcely necessary to add that the leading Russian medical journals welcome the circular, the necessity of the measure having been unanimously advocated by them year by year.

ANTHROPOLOGY IN GERMANY.

The Congress just held at Münster affords ample proof of the progress Germany is making in anthropological research. Two hundred members were present, and, as usual, Professor Virchow was the most conspicuous and the most honored of the number. The President (Professor Waldeyer) in opening the proceedings, reviewed the history of the German Anthropological Society since its origin at Innsbruck in 1869, and among its achievements he signalized the splendid prehistoric map and the catalogue of prehistoric treasure-trove now approaching completion. At Virchow's instance, comprehensive researches have been made on the racial characteristics of Germany, and from the color of the hair, the skin, and the eyes, it has been ascertained that a blonde and a brown Germanic people dwell side by side in a sort of interlinear fashion. A very interesting memoir on the anthropological features of Westphalia as they emerge from prehistoric investigation, was followed by Virchow's short addresses on the occurrence of bronze ornaments in the Caucasus, on the application of antimony as a cosmetic, on von Schliemann's excavations, and on the cradle of the peoples in Interior Asia. An elaborate paper by Waldeyer came next, on the perennially interesting theme of the antiquity of mankind, including the points of resemblance between it and the higher grades of animals, as well as the importance of climatic influ-

ence, coupled with that of civilization, on the human skull-formation. The last day's sitting was a very animated one, mainly on account of the discussion evoked by a paper giving anthropometrical results based on the measurement of 2,100 English students. The growth of the bodily powers, it seems, proceeds steadily up to the twenty-fourth year, after which it begins, at first almost imperceptibly, to decline. This limit, however, can by no means be assigned to the intellectual powers, which go on increasing till a much later life-period. Another paper of peculiar interest to army surgeons was read by General-Secretary Ranke, on the corporeal measurements of the Bavarian recruits and the physical deductions to be drawn from these. The final contribution, that of Dr. Finke, on the "History of Westphalia, from the Earliest Times up to the Introduction of Christianity," was in some respects the most elaborate and striking of all, though the interest appeared at first to be of a purely local character. It was the work of a most accomplished anthropologist, and showed among its rich antiquarian, sociological, and artistic details what a field of important and stimulating knowledge lies in the immediate neighborhood of every true man of science. The customary banquets and excursions varied the work of the Congress most agreeably, and Virchow, in a genial toast at one of the former, proclaimed that in the interests of science the Münster Academy should be promoted into a fully equipped University. One most significant and gratifying feature of the gathering was the large number of medical men who took part in the proceedings.—*Lancet*.

THE EFFECT OF ENVIRONMENT.

The Rev. W. H. Dallenger, F.R.S., in his address delivered before the Bristol Naturalists' Society, pointed out that in the case of larger animals it was well known that changes in the environment produced change in the organism, but on account of the slowness of succession of the different generations, it was impossible for any one observer to follow up these changes to any extent. In the case of microorganisms, however, the succession of the generations takes place with such rapidity, that it becomes possible to produce well-marked change in the organism by the gradual increments of variation in the environment. In the case of one microorganism, he had been able in some eight years so to change it that it could live and multiply at a temperature of 157° F., although its optimum temperature at the beginning of the experiment was 65° F., and the upper limit at which it could live 100° F.

THE SANITARY CONDITION OF LIVERPOOL.

The position of Liverpool as one of the most frequented ports in the United Kingdom renders it peculiarly liable to the introduction of infectious diseases from abroad, and it suffered severely during the cholera visitations of 1832, 1849, and 1866. It places the system of sanitary inspection of the port in a favorable light, that since the outbreak in 1866 only two cases suspected to be cholera have occurred; and the experience of the last twenty-four years gives good ground to believe that cholera in the South of Europe will not spread to that city.

PRACTICAL NOTES.

POMADE FOR PRURIGO.

R—Boric acid.
White wax aa 10 parts.
Paraffine, 20 parts.
Olive oil, 60 parts.

—Kaposi.

POMADE FOR FISSURE OF THE ANUS.

Boric acid, 3 parts.
Chlorohydrate cocaine, 1 part.
Lanoline, 30 parts.

To be used after thorough cauterization of the parts with silver nitrate.—*L'Union Médicale*.

TREATMENT OF GONORRHOEAL ARTHRITIS.

R—Camphor 100 grains.
Extract of opium 75 grains.
Alcohol 1 drachm.
Extract of belladonna 75 grains.

This is to be made into a cataplasm and applied over the part from ten to twelve hours, the joint being made immobile by proper dressings.

IRON, GLYCERIN AND CHLORATE OF POTASSIUM MIXTURE.

Tincture of chloride of iron 30 mins.
Chlorate of potassium 1 dr.
Glycerin $\frac{1}{2}$ oz.
Water, sufficient to make 4 ozs.

Dose for adults, a teaspoonful every two hours; children, 20 drops to half a teaspoonful, according to their age.

A NEW METHOD OF PRODUCING LOCAL ANÆSTHESIA.

Dr. Voituriez recommends in the *Moniteur Thérapeutique* a method of producing local anæsthesia which certainly possesses the merit of simplicity. It is based upon the "well-known anæsthetic properties of carbonic oxide," and consists in pouring on the place to be anæsthetized the contents of two or three bottles of seltzer water, preferably by means of the syphon, which releases the water in a strong stream. The anæsthesia lasts five minutes and then gradually disappears. It is difficult to see how the "well-known anæsthetic properties" of the oxide are exerted by external application. The effect, if any, is probably mechanical.—*Druggist's Circular*.

A SIMPLIFIED TEST FOR SUGAR.

Prof. Nothnagel has communicated to a meeting of the Medical Association at Vienna a paper received from Dr. Becker, of Cairo, on a simplified test for sugar, which depends upon the fact that the paper used for the manufacture of visiting cards contains a larger quantity of potash to

make it heavier and fuller. When this paper is brushed over with a concentrated solution of sulphate of copper and then dried, the salt is crystallized on the surface. If the urine containing sugar is then added by means of a bit of wood and allowed to dry by the action of the air, or by holding it over an Argand burner (without browning the sulphate of copper), the latter is liquefied by the water contained in the small crystals, and the alkaline paper immediately produces the sugar-browning reaction. The more sugar the urine contains, the darker the color produced. The author considers the test highly sensitive.—*Lancet*.

REMEDIES FOR NASAL CATARRH.

Prof. Leffert's solution for nasal catarrh is as follows:

R—Acidi carbolic, ʒj.
Sodii boratis, ʒj.
Sodii bicarbonitis, ʒj.
Glycerini, ʒj.
Aquæ rosæ, ʒj.
Aquæ, ad. Oj. ℥

Sig.—Use as a spray.

Of catarrh snuffs the following are praised:

For scrofulous rhinitis:

Sulphophenate of zinc, 20 centigrams.
Tannate of zinc, 2 grams.
Pulverized tobacco, 10 grams.
Salicylate of bismuth, 4 grams.
Iodol, 3 grams. ℥

For chronic catarrhal rhinitis:

Pulverized alum, 2 grams.
Borax, 2 grams.
Menthol, 20 centigrams.
Tannate of zinc, 3 grams.
Tannate of bismuth, 3 grams.
Lycopodium, 8 grams. ℥

—*Pharmaceutical Era*.

HOW TO DETECT THE MORPHINE HABIT.

An efficient means of detecting the morphine habit is by adding a few drops of perchloride of iron to the patient's urine. A characteristic blue tinge results if he is a morphine user.—*N. Y. Med. Times*.

TO CLEAN HYPODERMIC SYRINGES.

Syringes, the canals of which have become obstructed, so that a fine wire cannot be drawn through, may, according to the *Deutsche Medicinische Wochenschrift*, be cleaned by holding them for a moment over a flame, the foreign substances being by this means rapidly destroyed and driven off. If a wire has been rusted into the needle it should be dipped in oil before holding over the flame. To remove the rust from the interior of the canula it is well to pass oil through the canula, then heating it; then rinse it out with alcohol. The needle may then be used.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Atropine and Morphine to Combat the Noxious Effects of Chloroform—Interstitial Infections of Solution of the Bichloride of Mercury in the Treatment of Tumors—Treatment of Hæmorrhage due to Fibromata by preparations of Ergot of Rye and Hydrastis Canadensis.

Dr. Dastre has, for some time, undertaken experiments with a view of combating in the dog the noxious effects of chloroform, by the association of atropine and of morphine, and Dr. Aubert, of Lyons, was the first to endeavor to ascertain on man the advantages of this method. In a note by Dr. Reynier on the subject, which he read at a recent meeting of the Société de Chirurgie, he stated that he has employed this method in a certain number of cases in his service at the Hospital Tenon, and he has had one death, which he believes should be attributed to the association of these three elements. It was the case of a young girl of sixteen years of age whom he had recently operated on for a tuberculous osteitis of the cuboid bone. Half an hour before the operation, he had injected under the skin half a Pravaz syringeful of a solution containing per syringe 1 centigram of morphine and half a milligram of atropine. The chloroformization was easy. The operation lasted only ten minutes, during which time about 30 grams at the most of chloroform was absorbed. The patient, without awakening, opened her eyes, and the surgeon had left the ward when a message was sent to him to say that she had ceased to breathe. On his return he found her white, livid, still breathing feebly, with the pupils strongly dilated. In a few seconds the respiratory movements were definitely arrested and the pulse ceased to beat. Three hours of artificial respiration was employed, during which, on two or three occasions, the beats of the heart were perceived, but the patient was not restored to life. The autopsy was practiced by Prof. Verneuil, which revealed nothing particular, except anæmia of the bulb. Dr. Reynier concludes that in this case bulbar paralysis was produced by chloroform, and what is to be remarked is, that this paralysis had come on so late, ten minutes at least after the administration of the last drop of chloroform. It may be remarked that in patients anæsthetized by this method, the waking takes place tardily, the atropine and morphine are poisons of slow elimination, and the elimination of chloroform is equally retarded. Dr. Reynier had undertaken, with reference to this subject, a series of experiments, the result of which was that atropine stopped the beats of the heart more quickly, and that, if it renders the

accidents at the commencement less imminent, it exposes more to accidents at the end and renders them more dangerous. According to Dr. Terrier, who, on his side, had made some researches on this method, he observed that the anæsthesia varied according to the subjects. In man, notwithstanding the injection, the period of excitement exists, the waking is very brusque. In women the agitation does not take place. It is wanting four times out of five. He also had one death in a young woman on whom he had performed nephrectomy. Death took place ten minutes after the cessation of chloroform. Dr. Schwartz observed that by administering chloroform in small doses, as practiced by Dr. Labbé, one never meets with the accidents that are sought to be avoided by the atropo-morphinic method.

Dr. Poucel, Hospital Surgeon at Marseilles, recommends interstitial injections of solutions of the bichloride of mercury in the treatment of tumors in appearance cancerous. He says he has obtained several cures by this method, and he speaks of tumors of cancerous appearance, as in subjects affected with hereditary syphilis, one sometimes sees tumors develop which for the most part bear the clinical characters of cancer. However, in these cases the iodide of potassium is the principal part of the treatment. It dissolves pseudo cancers of syphilitic origin and remains without effect against true cancer. He states that therapeutically appears to establish that which histology still discusses, viz.: that these tumors of cancerous appearance, and perhaps all tumors, are produced by a microbe which characterizes such cellular malformation, as several among them, and perhaps all, might be cured by an anti-microbial treatment practiced early. The following is the method adopted by Dr. Poucel in the treatment of tumors: He injects with Pravaz's syringe, after taking the most vigorous precautions, in from two to six punctures, from 1 to 3 grams of the liquor of Van Swieten in the most indurated parts of the tumor. After the injection, the liquid must be retained as the retraction of the tumor tends to expel it. These intra-parenchymatous injections are ordinarily but little painful, do not produce salivation, and may be renewed every day. The inflammatory and gangrenous phenomena which are sometimes observed are attributed to the omission of some part of the antiseptic rule. When the cure is about to be produced, it is announced at the end of about twenty sittings or more. Dr. Poucel, therefore, believes that surgeons who have not yet renounced operating for cancer would do well not to undertake any operation before they have submitted their patients to the treatment vaunted by him.

In the treatment of hæmorrhage due to fibromata Dr. Lohlein recommends the preparations of

the ergot of rye and the extract of *hydrastis canadensis*. He has tried these remedies with success in women who menstruated too frequently, and whose menses are too abundant and too prolonged. *Hydrastis* is still more active than ergot, and Dr. Lohlein remarks that when the subcutaneous injection presents any difficulty, the ergotine may be administered per rectum either in the form of small enemata or in the form of suppository. In order to obtain the full effects of the *hydrastis canadensis*, it should be administered from six to ten days before the expected period, 30 drops to be given three times a day. In this way the intermenstrual period is lengthened and the duration of the hæmorrhage shortened.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

First Examinations under the New Law—State care of the Indigent Insane—The Lamborn Prize Essays on the Mosquito and its possible extermination—Cultivation of Plants under the Electric Light—A 5-year old Child falls six stories without serious injury.

The first examinations of those proposing to enter the study of medicine and law, under the direction of the Regents of the University of the State of New York, in accordance with the provisions of the new law, were held during the last week of September. In this city and Brooklyn nearly three hundred young men and a few young women were examined at the College of Physicians and Surgeons, the Medical Department of the University of the City of New York, and the Long Island College Hospital. All the students are required to pass satisfactorily in arithmetic, geography, grammar, English composition and spelling, and United States history. In addition, medical students must pass in either physics or physiology, as they may elect, and law students in English history. The same questions on each of these branches were also submitted to students presenting themselves at Albany, Syracuse and Buffalo. It is noticeable that the questions often call for information in regard to very recent matters, so that those who read the newspapers, other things being equal, have the best chance of success. For example, in geography some of the questions are as follows:

7. Mention in the order of their size the largest three cities of the United States, as determined by the census of 1890.

11. What States of Central America have recently been at war?

13. What country of South America recently

changed its form of government, and what was the change?

19. Describe the Congo River, telling where it rises, in what direction it flows, and into what it empties, and give the name of the explorer who first traced it from its source to its mouth.

The percentage required to pass the examiners is 75, but an applicant who fails can come up again as often as he likes. A similar series of examinations will be held in November, January, March and June. The students are allowed three hours in which to prepare written answers upon each subject.

This law, which is similar to that previously adopted in other States, is designed to diminish charlatanism and quackery in both the medical and legal professions. Up to the present time any accredited physician might practice in this State by the simple act of registry with the Clerk of the county in which he desired to practice; and a lawyer's right to practice was as easily secured. Under the new law medical or law graduates, physicians or lawyers in practice, and graduates of colleges or first-class schools are exempt wholly or in part from examination. Beginning with next year, however, the exemption will be contracted, and persons not then fully entitled to practice must pass the preliminary examination, no matter how well prepared for professional work. Even experienced physicians coming into this State to practice may be required to submit to examination upon the subjects indicated; and a certificate from the University of the State will be the only sure passport for the recognition from county boards of health which is now extended to all physicians who take the trouble to register themselves at the office of the County Clerk.

Under the system that has hitherto prevailed, large numbers of the insane in this State who had neither friends nor money were deprived of the benefit of the care and treatment to which they were entitled because of the private pay patients who were received into the State hospitals for the insane. Under the provisions of the law passed at the last session of the Legislature establishing State care of the indigent insane, however, the State Commission in Lunacy has taken upon itself the work of reforming this injustice. The new law recognizes the poor insane as the special wards of the State, and accordingly the Commission has ordered that, beginning with October 1, no private patient in any State hospital shall be allowed to occupy exclusively more than one room or be permitted to have the exclusive services of an attendant, and that no distinction whatever shall be made between private and public patients in respect to the quality and amount of the care and accommodation furnished them. Many of the abuses that have crept into the county asylums under the pay system will be remedied by the new law, and as there are plenty of private

institutions where patients whose friends can afford to pay for them can have all the advantages of the most approved methods of treatment, this reform can only result in much good.

The Messrs. Appleton have just issued a book of considerable scientific interest which is devoted to the Lamborn prize essays on the mosquito and its possible extermination. Early in the summer of 1889 Dr. Robert H. Lamborn sent out a circular to the "working entomologists of the country," offering prizes for the best essays describing original investigations on this subject, and when the competition was completed the first prize was awarded to Mrs. C. B. Aaron, while the second was divided between Mr. Archibald C. Weeks and Mr. William Brentenmuller. Some of the points and observations contained in these essays are worthy of special note. There seems to be no doubt that the mosquito is capable of communicating a poison. The fact that if the insect is allowed to remain long enough to draw out a sufficient quantity of blood from its victim but little irritation follows would seem to prove this; but it is also said that it is capable of inoculating the human species with malarial disease. Lewis has found twenty female mosquitos (and it has been ascertained that it is the female mosquito alone that bites) out of 140 to be infected with hæmatozoa, and McLeod, in commenting on this, calls attention to the serious consequences arising from filaria in the blood. Dr. Finlay, of Havana, asserts that it is his belief that the mosquito is an agent in spreading yellow fever. He says that the insect, after puncturing the skin of a yellow fever patient, retains some of the germs of the disease, and is thus liable to communicate the infection to the next person it visits. So sure is he that the mosquito is the active, if not the only, agent for the dissemination of yellow fever, that he holds that the disease cannot exist where the mosquito does not flourish. In apparent corroboration of this opinion, he states that in the summer of 1885 mosquitos were unusually scarce in Havana, but were very numerous in the autumn, and that during this summer there were but few yellow fever cases, while in October and November the number increased very considerably. Mr. H. Hammond, in *Science*, presents some facts which appear to go to confirm this view. "In 1839," he says, "during a yellow fever epidemic in Augusta, Ga., no cases originated at Somerville, a neighboring suburb among the sand hills. There were no mosquitos at Somerville, which was approached by a rather circuitous route from Augusta. Some years after, a straight, broad road was built through the swamps directly to the sand hills, cisterns were also built, and mosquitos appeared and became an intolerable pest. During the yellow fever epidemic of 1854, a number of cases originated at the sand hills abounding with mosquitos."

One of the methods that has been proposed for the destruction of mosquitos is the propagation of the dragon fly, which feeds largely on this insect. Its great voracity, and the fact that it chooses the same localities as the mosquito, would be relied upon for the extermination of the pest by those advocating this remedy. On the other hand, as militating against the practicability of such a plan, it is alleged that the mosquito is largely a nocturnal insect, while the dragon fly is only diurnal, and that it would be quite impossible to propagate dragon flies artificially with anything like the rapidity with which mosquitos propagate themselves. Mr. Weeks, in his essay, suggests that the best plan to banish the mosquito is to drain meadows, bogs and swamps, and to fill up stagnant pools and level rain-holding hollows contiguous to dwellings. He also says that one remedy very simple and near at hand is the preservation of insectivorous birds.

Mr. Brentenmuller holds the plea, raised in behalf of the mosquito, that in its larval stage it destroys the germs of the miasmata, to be futile and misleading. These germs, in our present state of knowledge, are very indefinite organisms, and there are methods of exterminating them much more effective than the work to be expected from the mosquito, viz.: drainage, clearance and sunlight. Among the natural remedies to be relied upon against mosquitos, he says, are the services of fish and water-fowl. Fish can be introduced into our public lakes, and aquatic birds may be adopted for the purpose of destroying mosquito larvæ near houses and in ponds in well-cleared fields. This naturalist states that he has often observed how infrequent the larvæ are in the Central Park lakes, and he ascribes their absence to the fish and the water-fowl abounding there. Certain artificial remedies are also suggested, such as the use of coal oil in swamps, the larvæ being destroyed by the oil floating in a thin film upon the water. One very interesting point is made by Mrs. Aaron. The public does not rightly understand the migrations of mosquitos, she says. The idea prevails at the seaside that a land breeze brings swarms of them from inland. This notion is based on the supposition that mosquitos are capable of long sustained flights, which is an error. It is usually only during the lulls in the wind that they can fly, and when a strong sea breeze is blowing the mosquitos conceal themselves in trees and large bushes. When the wind dies down, however, they come out from these hiding-places.

The experiments in the cultivation of plants under the electrical light recently made in the botanical department of Cornell University, at Ithaca, have given some rather curious results, and corresponding for the most part with those met with in some similar experiments previously reported from Russia. The first and most notice-

able effect of the treatment is an enormously increased rate of growth, though the plants seem to "run very much to leaf." Thus vegetables, such as peas, shoot up very quickly, and in a few weeks are two or three times as tall as those planted under ordinary conditions. It has been observed in every instance, however, that the reproductive powers are strongly affected, these being sacrificed to mere foliage and rapidity of increase in general size; so that in the matter of buds and fruit of any kind the development is far inferior to that observed in plants grown in sunlight.

There is a little boy five years old in this city, who was apparently not born to die from tumbling down stairs or any accident of that kind. One evening not long since the youngster, while playing on the roof of the tenement house where he resides, slipped into a narrow shaft between that and an adjoining building and fell all the way to the ground, a distance of six stories. Yet, strange to tell, when he was picked up it was found that not only was he alive, but that no bones were broken, and that with the exception of a rather severe scalp wound he was but little the worse for his extraordinary fall.

P. B. P.

TENTH INTERNATIONAL MEDICAL CONGRESS.

To the Editor:—I have the honor to report something more than the fact of a pleasurable time—and the meeting with many eminent men. What I saw and heard by no means embraced the whole scope of the Congress. No one person could take this in, and as its full relation would overcrowd the columns of *THE JOURNAL*, only a few items will be referred to.

1. *The Management.*—The Congress was well managed, if a great good-natured medical assemblage can be well managed anywhere. Everywhere was present the evidence that almost everything of advantage to its members had been anticipated with that thoroughness of detail which characterizes German methods. It was a fine idea that of holding the sessions in Exhibition Park, a large enclosed area of many acres, amply furnished with space outside and inside. The arches of an elevated railroad that ran through it were utilized for offices; this suggests that our L-roads be made on street fronts and not in the middle as now, and the under spaces made use of for business purposes.

The Sections, eighteen in number, were mostly held in the salons of a large picture gallery. In this way the music of the eye was joined to the music of the voice in speaking. I am compelled to say that most of the speakers could not be heard simply because they did not speak in the chords of the keynote of the auditorium. Some

Americans complained that the Germans did not wait to hear them read through. It is possible that the acoustic difficulties drove them away. Nothing is harder to stand than an address with a delivery which is unintelligible, and doctors are not celebrated for their oratory.

2. *Papers Printed Beforehand.*—Most of the readers had their papers printed beforehand, read from them and distributed copies afterwards. This is a good idea and facilitates the production of the Transactions. It is something worth the consideration of the American Medical Association. It might result in terser papers and it certainly would facilitate business.

3. *General Meetings.*—The general meetings in the Circus Ring were inspiring from their magnitude. One realized a little how many doctors there are at work in the world. It was almost impossible to hear anything in the seat assigned to me because of its remoteness. There were a good many lay visitors to whom it was necessary to accord high places and, of course, they crowded out so many delegates, but so long as this necessity was understood there was no grumbling. Indeed there was the best of feeling.

4. *Pharmacology.*—This Section was a deserved recognition of pharmacists, the same as that which the American Medical Association bestowed at Nashville last May. It marks a step forward and which gives promise of the best results.

5. *The Entertainments.*—They were many and varied and well carried out. As in America, so here, some of the profession overstepped the bounds of sobriety and lost somewhat by it—but the great mass was decorous. The private hospitalities were free and some delegates lived with their Berlin friends. The habit of smoking and making speeches at the table during dinners was new to some. In the speeches of some Americans I noticed a tone of apology when it seemed that none was required; America sent over one-tenth of all the delegates, was put at the head at the imperial reception and had a large share of the general addresses. Ninety-two out of 660 papers, read in the Sections, if the count is correct, were American. In the Health Exhibit, on the gable ends of the Great Hall, the American names of Sims and Rush shone equally conspicuous with Galen, Hippocrates, etc. American ideas were welcomed there also, so that we had no need to apologize.

6.—*The Empress.*—I happened to be at the Exhibition when the Empress visited it and was close to her. There was no fuss nor feathers. In every sense a lady, modest in dress, she showed an intense interest in the various phases of the exhibit as they were shown to her. She appeared in every way a grace and honor to her exalted position. I think she impressed the visitors as favorably as did Mrs. Cleveland, when foreign

visitors were at Washington, in 1887. Her visit to the Exhibition was a mark of respect, and she evinced an interest in medical matters worth remembrance.

7. *Sanitary Exhibition.*—The eminently practical character of the various things pertaining to health in this Exhibition was very instructive. Amidst the multitude it is difficult to particularize. And as the catalogue is complete to it I must refer my readers.

8. *Frozen Sections.*—I refer to those of the Berlin pathological institute. These series were of the greatest interest to me, because for many years I had wished to make such sections, and because they settle some points of great practical value to gynecologists. I refer to those made in the median longitudinal line of the female trunk impregnated and post-partum. In all the sections the vaginal walls were in contact almost to a line. These prove that when in the dislocated uterus the vagina is shortened longitudinally and lengthened laterally, there is a diametrical opposition to the normal vaginal axes. To restore and retain the uterus *in situ naturali*, the transverse muscular fibers of the vagina must be contracted into normal contact. Again, in one of the frozen sections there was a sub-involuted uterus of double size and yet the vaginal walls were in contact. The axis of the vaginal and the axis of the uterus were in continuous curve and alignment. These sections completely support some American positions laid down about twenty years ago. It is to be hoped that like frozen sections of the unimpregnated female will be made in this country, to further sustain or disprove the position that curative mechanical means of uterine displacements must include the abandonment of pessaries that depend for their support upon distending the already distended and shortened vaginal walls.

9. *The Music of the Congress.*—So long as Prof. Shoemaker, of Philadelphia, has put music in the materia medica, the excellence of the medicine music at Berlin should be noted. It is difficult to draw the line when there is so much superiority, but I think that the in-door music at Knoll's Garden on Saturday evening was the best. Of course in music there are different types of great excellence. For example the out-door garden concert by three military bands at the Court Reception at Potsdam, was for fine rendering, exquisite touch and finish of execution, delicate balancing of parts and timbre and timely appreciativeness—a remarkable performance. The music of the band located at the extreme west was so engrossing as to chain me to the spot where I stood and was for the time oblivious to passing events—but taking the ground that the voice is the most wonderful instrument of music, the palm must be rendered to the Knoll's Garden artistes who came from London, Stockholm, Moscow, Wiesbaden, Vienna, Berlin, etc. and gave this

concert, the best I ever heard. The good wife, the better musical critic, found it soulful, satisfying and restful. It was splendid medicine to nerves worn out by hard work in the Sections through the week. It gave strength; it imparted vigor; it healthfully toned up the central nerve centers; it showed one secret of German national strength. Such music makes strong because it relaxes nerve tension which long kept up weaknesses and crazes. It was in line with the beautiful morning hymns with which the military mounted bands, preceding the troops going to parade, roused us gracefully from sleep at six o'clock nearly every morning. It taught a lesson how to confer force by stopping its wasteful expenditures through the brain unduly working. All things that arrest the needless expenditure of nerve force belong to the materia medica, and good music ought to have its place there as Dr. Rush showed many years ago. But it must be good music. I am not sure but that some good music introduced in the Sections of our annual meetings would add to the good understanding of subjects, because a rested brain works so much better than when tired.

10. *Microphotography.*—I saw much fine work and many cameras for the purpose—some of them new. They photograph with the eye-piece and objective a good deal. But I could not find either microphotographs or apparatus which excelled American appliances and work done in 1876. There was no systematic microphotography of the morphology of consumptive blood and foods or drawings of the morphology of the sputum, for example as to American microscopes. An eminent German microscope maker inspected one which I brought and said there were none like the highest objectives (Tolles) or such stands in Germany, simply for the reason that no one would pay for them. This gentleman thanked me for the opportunity of inspecting this specimen of American work.

Personals.—In the largest scientific gathering the world ever saw, there had to be a huge amount of clerical and managerial work which was very creditable to all concerned. I no not individually particularize, but personally know that the general secretary, Dr. Lassar, was deservedly complimented for his arduous labors. The chairman of the Section (of Gynecology), Dr. A. Martin, very ably handled his business. Those who read were notified by postal when they were expected and this saved a good deal of trouble, in a Section whose work was so very much crowded. Dr. Martin is an honor to his nation and profession. In this connection, Prof. von Leyden, managing member of the Section of Internal Medicine, should receive mention for his courtesy, efficiency, interested observation and good management. Do not think these are mentioned to exclude others, but because I am able to speak from personal knowledge—for the Ber-

lin Congress was splendidly managed as to business, hospitality, entertainments, and welcoming of guests, and I desire to give all a chance, but the inevitable delays that came from non-appearance of readers, prolonged discussions made paper-reading short. The privilege of seeing distinguished medical workers from all over the world and of knowing those by sight who had been known long by their writings was a boon. The great good of such congresses is the planting of seeds of thought that may spring up and bear abundant beneficent fruit after the sowers have passed away and know naught of the good they have done. This encourages workers to persevere, knowing that good work honestly done will some time receive the recognition it deserves and thus honor their profession, race and country.

EPHRAIM CUTTER, M.D.

A Delegate from the American Medical Association.

NECROLOGY.

DR. J. MATTHEWS DUNCAN, of London, died at Baden, September 3, at the age of sixty-four years. He was a native of Aberdeen, educated at Edinburgh and Paris, taking his degrees about 1850. He was a coinvestigator with Simpson in developing the anæsthetic uses of chloroform. Dr. Duncan took high rank as a clinical teacher in midwifery and gynecology and general medicine, and not only became extremely popular among the Edinburg students, but became well-known throughout two continents long before the fortieth year of his age. When the death of Sir James Y. Simpson made a vacancy in the chair of midwifery in the Edinburgh University, Dr. Duncan was regarded as the professional candidate for the place, but the appointment fell to the lot of Dr. Simpson, of Glasgow, a nephew of the deceased professor, who had the votes of the lay-curators of the institution, those having the preponderating weight. Not long after, in 1877, Dr. Duncan was invited to take the professorship of midwifery in the college of St. Bartholomew's Hospital, London; thither he removed and taking up his residence in Brook street, became the neighbor of Drs. Jenner, Gull, Ord, Savory, Habershon, Palfrey and Harley. He became a consultant of the first rank, winning the esteem and affection of the profession as well as those whom he personally served. His writings were many, but rather fugitive in character, and their subjects bore, with especial frequency, on obstetrics and diseases of women and children.

DR. J. NELSON BORLAND, formerly of Boston and Nahant, died August 10, aged sixty-two years. He was a graduate in medicine at the

Harvard University in 1850, and afterward attached to that institution as Instructor in Clinical Medicine, for several years. He was one of the first staff of visiting physicians at the Boston City Hospital, and joint editor of its reports. He retired from practice twelve years ago, and made his home at Waterford, Conn. He was a man of great geniality of manner, a fine presence and a general favorite in every walk of life wherein he moved.

DR. ROBERT ALEXANDER MANWARING, a classmate of Dr. Oliver Wendell Holmes, and for nearly fifty years one of the leading physicians of eastern Connecticut, died at New London, September 1. He came from Colonial stock and was born August 11, 1811. He was a type of the old time general practitioner, kindly, practical and modest.

DR. DANIEL W. KISSAM, died at Brooklyn, N. Y., September 9. He was born in New York City fifty years ago, and received his degree from the College of Physicians and Surgeons in 1865. Since King's, now Columbia College, was founded the name of Kissam has been an oft repeated one on the Catalogue, the first in the long list being Samuel Kissam, one of the two graduates honored in 1769 with the degree of Bachelor of Medicine.

MISCELLANY.

U. S. MARINE-HOSPITAL SERVICE EXAMINATION.—A Board of Examiners, of which Surgeon W. H. H. Hutton, of the Marine-Hospital in Baltimore, is Chairman, has been ordered to convene at New York, Oct. 27 for the purpose of examining applicants for admission into the Marine-Hospital Service.

ONE of Reed & Carnrick's extensive factories at Goshen, N. Y., was destroyed by fire on the 10th ult. This factory was devoted wholly to the production of their soluble food and lacto-preparata and contained extensive and valuable machinery. They had considerable stock of these foods at their New York office, and consequently there will be no delay in filling orders. The factory will be at once rebuilt three times the size of the one burned, with machinery correspondingly enlarged. —*Dietetic Gazette*.

TRI-STATE MEDICAL ASSOCIATION.—The second annual meeting of the Tri-State Medical Association of Alabama, Georgia and Tennessee will be held in Turner Hall, Chattanooga, Tenn., on October 14, 15 and 16. It promises to be one of the most successful, profitable and entertaining meetings ever held in the South.

A fare of one and one-third rate has been secured on all roads. Procure straight tickets and procure from your ticket agent a certificate showing the purchase, form, and kind of ticket, rate, route, etc. Get Secretary of Association to endorse certificate, present to agent at Chat-

nooga for return ticket at one-third rate. On C., R. & C. R. R., buy round trip ticket. From some points it may be advantageous to purchase ticket to Lookout Mountain. North of the Ohio, harvest excursion tickets will be on sale on the 14th, one fare for the round trip.

FRANK TRESTER SMITH, M.D., Sec'y.

The following is a partial list of papers to be read:

President's Address, "The Doctor," J. B. Cowan, M.D., Tullahoma, Tenn.

"Amputation of Hip in Two Times Method," Duncan Eve, M.D., Nashville, Tenn.

"Report of a Case of Ulceration after Exsection of the Breast," L. G. Dozier, M.D., New England City, Ga.

"Report of a Case of Fracture of the Pelvis, with Presentation of Patient," W. T. Blackford, M.D., Grayville, Ga.

"Case of Remarkable Injury with Recovery, Presentation of Patient," E. A. Cobleigh, M.D., Chattanooga, Tenn.

"Report of a Case of Gangrene of the Leg," W. L. Stevens, M.D., Dayton, Tenn.

"Report of a Case of Phlegmonous Abscess," C. H. Holland, M.D., Chattanooga, Tenn.

"Report of a Case of Cancrum Oris," W. P. McDonald, M.D., Hill City, Tenn.

"Report of Cases of Fracture at the Elbow-joint," Andrew Boyd, M.D., Scottsboro, Ala.

"Report of Two Cases of Cataract Absorbed, and Cases of Glaucoma Cured without Operation," J. M. Hull, M.D., Augusta, Ga.

"Neuralgia," W. L. Gahagan, M.D., Chattanooga, Tenn.

"Morbid Reflex Neuroses Amenable to Surgical Treatment," Willis F. Westmoreland, M.D., Atlanta, Ga.

"Abscess of the Liver," Richard Douglass, M.D., Nashville, Tenn.

"Report of a Case of Abscess of the Liver," J. R. Rathmell, M.D., Chattanooga, Tenn.

"Cases of Gall Stones," E. E. Kerr, M.D., Chattanooga, Tenn.

"Expert Testimony," Mr. Sydney B. Wright, Chattanooga, Tenn.

"On all Sides a Learned Doctor," James E. Reeves, M.D., Chattanooga, Tenn.

"The Dynamics of Mediumism," J. E. Purdon, M.D., Cullman, Ala.

"A Contribution to the Study of Continued Fevers of the South," Llewellyn P. Barber, M.D., Tracy City, Tenn.

"A Few Remarks on the Fevers of Middle Tennessee and their Treatment," J. C. Shapard, M.D., Winchester, Tenn.

"Some Phases of Typhoid Fever as well as the Abandonment of the Typho-Malariae," J. W. Russey, M.D., Rising Fawn, Ga.

"Diagnosis of Corneal Affections—Flourescein," Frank Trester Smith, M.D., Chattanooga, Tenn.

"Eye Strain," A. G. Sinclair, M.D., Memphis, Tenn.

"Physiological Functions of the Nose," A. B. Thrasher, M.D., Cincinnati, Ohio.

"Uterine Fibroma," J. C. Murfree, M.D., Murfreesboro, Tenn.

"Some Irregular Forms of Epilepsy, with report of cases," W. C. Maples, M.D., Bellefonte, Ala.

"Dilated Cardiac Hypertrophy, with Nephritic Complications," W. C. Townes, M.D., Chattanooga, Tenn.

"Urethral Stricture and its Complications," J. D. Gibson, M.D., Birmingham, Ala.

"Palliative Treatment of Fissure of the Anus and Stricture of the Rectum," John P. Furniss, M.D., Selma, Ala.

"Some Affections of the Rectum," L. J. Krouse, M.D., Cincinnati, Ohio.

"Treatment of Cervical Catarrh," H. Berlin, M.D., Chattanooga.

"Laparotomy in Ectopic Pregnancy," Wm. H. Wathen, M.D., Louisville, Ky.

"Case of Epithelioma of the Cervix, Vaginal Hysterectomy," B. P. Key, M.D., Chattanooga.

"Strabismus and its Cure," Chas. W. Tangeman, Cincinnati.

"Scleroderma," A. Ravogli, M.D., Cincinnati.

LETTERS RECEIVED.

Ward Bros., Jacksonville, Ill.; Dr. Frank Trester Smith, Chattanooga, Tenn.; Dr. Gus. Evans, Aberdeen, Miss.; R. Law, Vancouver, S. C.; Dr. W. E. Connell, Wauwatosa, Wis.; H. S. Hutchinson & Co., New Bedford, Mass.; Braidwood & Stahl, Keokuk, Ia.; Dr. J. B. Mattison, Brooklyn, N. Y.; J. Astier, Paris, France; Dr. L. L. Leeds, Lincoln, Ill.; Dr. H. W. Elmer, Bridgeton, N. J.; Dr. D. P. Miller, Huntingdon, Pa.; Dr. Chas. Bryon, Corn, W. Va.; Bank of Commerce, Dr. J. E. Wright Indianapolis, Ind.; Bank of Commerce, Baltimore, Md.; First National Bank, Salina, Kan.; Germania Bank of St. Paul, St. Paul, Minn.; Dr. J. P. Creveling, Auburn, N. Y.; Dr. Carl Horsch, Dover, N. H.; W. Thomson, F. R.C.S., Dublin, Ireland; Pacific Medical Journal, San Francisco, Cal.; Dr. C. Lester Hall, Kansas City, Mo.; Dr. T. Wertz, Evansville, Ind.; Dr. Chas. N. Cooper, San Jose, Cal.; Dr. J. L. Williams, Boston, Mass.; Howard M. DuBois, Phila.; Dr. H. H. Peachey, Cincinnati, O.; Dr. Henry B. Baker, Lansing, Mich.; Dr. J. R. Kewley, Dr. E. Fletcher Ingals, Chicago Ill.; Reed & Carnrick, Jas. F. Madden, Dr. F. King, Dr. W. V. Davis, Dr. P. B. Porter, New York City; Clark, Forbes & Co., Miamisburg, O.; Dr. J. A. Muenich, Jefferson, Wis.; Dr. A. Blitz, Indianapolis, Ind.; J. W. Harrison, Jersey City, N. J.; J. T. Petty, Washington, D. C.; Dr. U. O. B. Wingate, Milwaukee, Wis.; J. D. Lingle, Sunbury, Pa.; Dr. W. L. Beebe, St. Cloud, Minn.; Dr. G. E. Francis, Worcester, Mass.; Dr. Geo. H. Grant, Richmond, Ind.; Dr. J. T. Mack, Sandusky, O.; Albany Medical College, Albany, N. Y.; H. E. Harris, Utica, O.; Dr. William D. Hamilton, Columbus, O.; College of Physicians and Surgeons, W. M. Danner, Chicago, Ill.; D. A. Deaver, Shermerville, Ill.; Dauchy & Co., W. A. Purrington, Gum Elastic Roofing Co., New York City; Dr. H. H. Powell, Cleveland, Ohio.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 27, 1890, to October 3, 1890.

In view of the abandonment of Ft. Gibson, Ind. Ter., to which post he is at present assigned for station, Capt. W. D. Owens, Jr., Asst. Surgeon, is relieved from duty at that post, and will, upon the expiration of his present leave of absence, proceed to Ft. Sill, O. T., and report to the commanding officer for duty. S. O. 125, Dept. of the Missouri, St. Louis, September 27, 1890.

In view of the abandonment of Ft. Crawford, Col., to which post he is at present assigned for station, Capt. J. L. Phillips, Asst. Surgeon, is relieved from duty at that post, and will, upon the expiration of his present leave of absence, proceed to Ft. Logan, Col., and report to the commanding officer for duty. Par. 1, S. O. 135, Dept. of the Missouri, St. Louis, September 27, 1890.

Capt. Louis S. Tesson, Asst. Surgeon (Ft. Sidney, Neb.) is granted leave of absence for twenty days, to take effect when his services can be spared by his post commander. S. O. 72, Dept. of the Platte, Omaha, Neb., September 25, 1890.

Capt. John L. Phillips, Asst. Surgeon, leave of absence granted in S. O. 164, July 16, 1890, from this office, is extended two months. By direction of the Secretary of War. Par. 3, S. O. 228, A. G. O., Washington, September 29, 1890.

Capt. Louis W. Crampton, Asst. Surgeon (Ft. Sheridan, Ill.) is granted leave of absence for one month, to take effect about October 1, 1890. Par. 2, S. O. 80, Div. of the Missouri, Sept. 30, 1890.

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No. 16.

ORIGINAL ARTICLES.

A SERIES OF CASES PRESENTING MINOR LESIONS IN THE MACULA LUTEA.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY G. E. DE SCHWEINITZ, M.D.,

OPHTHALMIC SURGEON TO THE CHILDREN'S AND PHILADELPHIA HOSPITALS; OPHTHALMOLOGIST TO THE INFIRMARY FOR NERVOUS DISEASES.

The lesions of the macula lutea which result from myopia, nephritis and diabetes, anæmia and cardiac disease are well known. Haab (Internationaler Ophthalmologen-Congress, Heidelberg, 1888) has classified the remaining diseases of the macula into several groups:

1. Those due to trauma (*a*) by contusion of the globe without rent in the sclera (*commotio retinae*, of Berlin); (*b*) secondary to penetrating foreign bodies; (*c*) secondary to a neighboring rupture of the choroid.

2. Those characterized by the general term senile macular disease.

3. Those seen in people of depressed nutrition—anæmia, diseases of the stomach, etc.—having at the same time an hereditary disposition to macular disease; and finally,

4. Those in which no etiological factor within or without the eye is discoverable.

In the groups just referred to, at least in the majority of them, a marked failure of central vision is a characteristic symptom. In the series of cases to which I beg your attention for a few moments full acuity of vision is present; general disease in most instances is absent; trauma and other local ocular changes are wanting, and with propriety they may be referred to Haab's fourth group in which no etiological factor within or without the eye is discoverable, that is discoverable in the sense that it is not possible to point with certainty to any one determining cause. These small lesions have certain features in common. They vary in size from one to four diameters of a retinal vein. Usually they are somewhat oval or irregularly round in shape, of varying tints, for the most part grayish-white, or buff-colored, sometimes more decidedly yellow, occasionally associated with some granular pig-

ment, or composed of small collections of yellow and black granulations. Their situation is usually either above or to the temporal side of the fovea in the macular region, and if in relation to any vessels they lie beneath them. For the convenience of study these cases may be classified into several groups:

GROUP I.—*Asymmetrical lesion—situated in the macular region of the eye presenting the greater error of refraction.*

Case 1.—D. N., a young man aged 19; very nervous; hard student; no general disease. Large irregular discs; many lymph reflexes. In the left eye up and in from the fovea a small oval patch of retino-choroiditis composed of yellowish and black granules interspersed, lying upon a buff-colored background. In the right eye no similar change. O. D. + .50s $\frac{3}{8}$. O. S. + 1.s $\frac{3}{8}$.

Case 2.—Miss M. B., a woman aged 55; blepharitis; unsatisfactory reading power; general health perfect; urine negative. In each eye healthy, oval optic discs. In the left eye a patch 3 by 4 mm. below the fovea characterized by yellow dots and a few pigment granules lying upon a yellowish-white surface. In the right eye no macular changes. O. D. + .75s $\frac{3}{8}$. O. S. + 1.s $\frac{3}{8}$.

Case 3.—Miss M., a woman aged 35; chronic conjunctivitis; typical asthenopia; bad occipital headaches; suffers much from dyspepsia, and has post-nasal catarrh. Oval discs and hazy retinas. In left macula a small, square, buff-colored spot in the choroid below the fovea. No similar change in the right eye. O. D. + .50s \bigcirc — 2.c axis H. $\frac{3}{8}$. O. S. + .25s \bigcirc — 2.50c axis 5 $\frac{3}{8}$.

Case 4.—Miss C., aged 20; suffers much with trigeminal neuralgia; hair prematurely gray; dreads light; has occipital headache; otherwise health good, although excessively nervous. In the right eye an oval disc; retina slightly hazy, and below the fovea a patch of choroidal change about 3 mm. square containing in its centre a cholesterolin crystal. In the left eye a nearly round disc, rather pallid, no macular change. O. D. + .50s \bigcirc + .60c axis V. $\frac{3}{8}$. O. S. + .50c axis V. $\frac{3}{8}$.

Case 5.—N. B., a man aged 46; for three months has had running ears; successive attacks of conjunctivitis; at times occipital headache; giddy spells;

ill-defined history of rheumatism. In the right eye a horizontally oval gray disc; small buff-colored patch below fovea. In the left eye similar disc with absorption of the pigment epithelium of the choroid, but no macular change. O. D. + 1. s \ominus .90c axis 165 $\frac{3}{8}$. O. S. + 1. s \ominus + .25c axis H. $\frac{3}{8}$.

Case 6.—Miss P., aged 39; itching and burning eyes; post-ocular pain, worse in right eye; has catarrhal pharyngitis; is deaf in the right ear. In the right eye an oval disc, below the fovea a small buff-colored spot containing a dark centre. In the left eye a normal disc without macular changes. O. D. + .75s \ominus + .60c axis V. $\frac{3}{8}$. O. S. + .50s \ominus + .50c axis V. $\frac{3}{8}$.

Case 7.—Mrs. M., age 35; frequent attacks of headache through brow and temple, aggravated by eye-work. Family physician sends report of perfect general health. In the right eye an oval disc, its surface too capillary. In the left eye an oval over-capillary disc; full lymph sheaths, and above the fovea an irregularly oval patch, yellowish, and studded with numerous darker tinted dots. O. D. + .50s \ominus + .50c axis V. $\frac{3}{8}$. O. S. + .90s \ominus + 1.c axis V. $\frac{3}{8}$.

Case 8.—Miss McF., aged 31; burning eyes; blurred print; bad frontal headache; has had rheumatism; no gout; otherwise healthy. In the right eye a large irregular disc; broad scleral ring, and intensely granular macula, and to the outer side of the fovea an irregular buff-colored patch in the choroid. In the left eye a round disc with broad scleral ring. No macular changes. O. D. 2.50s \ominus + .50c axis 75 $\frac{3}{8}$. O. S. 2.s \ominus + .50c axis V. $\frac{3}{8}$.

Case 9.—Miss S., aged 46; suffers much with eye pain and headache; is in delicate health, and hair prematurely gray. In the right eye an oval disc bounded by a black line, and below the fovea a small oval patch yellowish-white in color. In the left eye a round disc with a shallow central excavation and sharply marked scleral ring. No macular change. O. D. + .75s \ominus + .60c axis 120 $\frac{3}{8}$. O. S. + .75s \ominus + .25c axis 60 $\frac{3}{8}$.

Case 10.—Mrs. C., aged 58; in perfect general health, and no recent sickness; discs rather gray; veins full, transverse arteries slightly tortuous. In the right eye a small yellowish patch in the macula above and just at the edge of the fovea. In the left eye no similar change. O. D. + .50s \ominus + .50c axis 165 $\frac{3}{8}$. O. S. + .75s \ominus + .25c axis H. $\frac{3}{8}$.

In this group of ten cases, all with perfect central vision and unaware of any lesions of the eye, general health, with one exception, was good, the well recognized causes of macular disease were absent, a satisfactory reason for the spot of degeneration could not be supplied. It is perhaps suggestive that this occurred upon that side presenting the greater error of refraction. In two the refraction was hypermetropic, and the difference only .50D and .25D respectively; and in the

remaining eight there were seven with compound hypermetropic astigmatism in each eye, and one with mixed astigmatism on both sides, the spot being present in the eye exhibiting the greater anomaly of refraction. If instead of presenting ten cases the number had been one hundred or more, such an association would be more than suggestive; as it stands it may be merely a coincidence. I wish, however, to point it out and learn the experience of my colleagues. When we remember that conus and posterior staphyloma have been ascribed to the influence of astigmatism, that refraction error may cause symptomatic retino-choroidal irritation and even superficial neuritis, it may at least reasonably be suggested that slight macular changes may arise under the influence of anomalous refraction and in asymmetrical cases appear in the more affected eye. Bearing somewhat upon this question is the well known fact, and one that I have often observed in this very series of cases, that under the influence of correction such superficial lesions slowly subside, just as the general irritable condition of the whole eye-ground will disappear through similar treatment.

Still in touch with the present theory of the possible origin of these small lesions under the influence of an error of refraction are those which I have gathered into the second group.

GROUP 2.—*Symmetrical macular changes—symmetrical refraction error.*

Case 1.—Mrs. R., aged 40; much sick headache; very nervous; limbs swell (hysterical); heart and urine normal. In each eye oval discs with hazy edges. In the right eye a small crescent-shaped patch, buff-colored, below and to the temple side of the fovea. In the left eye streaks in the macula and one small buff-colored spot above. O. D. + 1.50c axis 105 $\frac{3}{8}$. O. S. + 1.50c axis 75 $\frac{3}{8}$.

Case 2.—Mrs. B., aged 44; headaches for years; severe hemicrania without prodromes; of feeble muscular strength; urine normal. In the right eye sharply marked scleral ring around an oval disc; several oval, buff-colored patches in the macula somewhat radially placed. In the left eye lower and inner edge of the oval disc hazy. Exactly similar macular changes. O. D. + .50 \ominus — 1.c axis 165 $\frac{3}{8}$. O. S. + .50 \ominus — 1.c axis 15 $\frac{3}{8}$.

Case 3.—W. D., a man aged 34; complains of blurred feeling when reading, lachrymation and smarting pain in the morning, general health perfectly good; organs and functions normal, although his hair is beginning to turn gray. Large, slightly oval, pallid discs with central lymph sheaths full. In each macula above the fovea a buff-colored crescent more marked upon the left side. O. D. + .50s \ominus + .25c axis H. $\frac{3}{8}$. O. S. + .50s \ominus + .25c axis H. $\frac{3}{8}$.

Case 4.—Mrs. H., aged 42; recent nervous

prostration; occipital and shoulder pain with strained feeling across forehead; reads better in the dusk. In each eye unduly capillary, oval optic discs with hazy retinas and finely tortuous transverse vessels. In each macula slight dot-like changes, and above each fovea a maroon-colored crescentic area. O. D. —.25c axis 135 $\frac{1}{8}$. O. S. —.25c axis 45 $\frac{1}{8}$.

I have quoted four cases to illustrate this point: one an example of simple hypermetropic astigmatism; another of compound hypermetropic astigmatism; a third of mixed astigmatism; and a fourth of simple myopic astigmatism. The lesions are in exact accord with those which have already been described. They differ from the last group in being symmetrical; they resemble the others in being present in people of perfectly good health, or at least in people free from organic disease, and in whom no cause either within or without the eye could be discovered to explain their presence. An exception to this, however, may be Case 4, which in all probability is one of changing refraction, and the spots may have appeared under the influence of this phenomenon.¹

To illustrate the imperfection of the theory which has been suggested that these slight macular lesions may possibly arise under the influence of refraction error and appear on the side of the greater anomaly, a third group has been quoted in which precisely the opposite condition obtained.

GROUP 3.—*Asymmetrical lesion—situated in the macular region of the eye presenting the smaller error of refraction.*

Case 1.—Miss P., aged 25; suffers from general headache and smarting eyes at close work; rather delicate, but organs sound, the delicate health probably being due to lack of exercise. In each eye oval discs with rather full veins. In the right macula a small patch of choroiditis about 4 mm. square below the fovea. O. D. + 1.25s \bigcirc .25c axis V. $\frac{1}{8}$. O. S. + 1.50s \bigcirc + .25c axis V. $\frac{1}{8}$.

Case 2.—Miss S., aged 47; cardiac asthma; has had rheumatism; no renal change, much headache. In each eye oval disc and sharply cut scleral rings. In the right eye a buff-colored patch above in the macula fringing the edge of the fovea. O. D. + .50s \bigcirc + .60c axis 165 $\frac{1}{8}$. O. S. + 50 \bigcirc + 1.c axis 15 $\frac{1}{8}$.

Case 3.—Mrs. B., aged 61; general health good; blurred vision; urine normal. In each eye small, oval discs, edges clear. In the left eye two small yellowish-white patches bordering the lower edge of the fovea. O. D. + 2.s \bigcirc + .90c axis 150 $\frac{1}{8}$. O. S. + 2.s \bigcirc + .50c axis 60 $\frac{1}{8}$.

Case 4.—Mrs. G., aged 28; brow, vertex, and occipital headache for years, the brow and occip-

ital headache in direct relation to the eyes; general health perfect. In each eye oval discs, rather gray in the outer halves, and in the left eye below the fovea an irregular patch, characterized by numerous yellow dots with some larger buff-colored spots. O. D. + .50s \bigcirc + .50c axis 105 $\frac{1}{8}$. O. S. + .50 \bigcirc + .25c axis 75 $\frac{1}{8}$.

These four cases, chosen from a number which I have seen, are all examples of compound hypermetropic astigmatism, two with the astigmatism according to the rule and two with the astigmatism contrary to the rule, and in all the macular change in that eye exhibiting the smaller error of refraction. It is not improbable that, if this topic were pursued and large numbers of cases gathered together, it would be found such spots occurred more frequently in eyes exhibiting the smaller degree of refraction error, for the very reason that they may represent eyes that are increasing in refraction and lessening the amount of hypermetropia.

We come now to consider the fourth group of these cases, in which it is possible to point with more exactness to a cause for the changes in the eye-ground, and I will ask your attention for a moment to this group.

GROUP 4.—*Symmetrical macular changes—asymmetrical refraction error; probable influence of constitutional derangement.*

Case 1.—M. G., a man aged 54; aching eyes; intense occipital headache; very gouty, suffering at times with severe exacerbations of acute gout; gouty change in the kidneys. Horizontally oval discs, gray, and in each macula numerous round yellowish dots about the size of the head of a pin. O. D. + 2.s \bigcirc + .50c axis H. $\frac{1}{8}$. O. S. + 2.50s \bigcirc + .75c axis 165 $\frac{1}{8}$.

Case 2.—D. L., a man aged 42; severe occipital headache; apparently fair general health; years ago had yellow fever. The urine free from albumen and tube casts, but loaded with uric acid. In the right eye an oval disc, the upper and inner edges veiled. Down and in from the disc a small spot of choroidal change and numerous yellow dots in the macula. In the left eye a round disc, edges veiled, and central lymph sheaths full. Similar macular changes. O. D. + .60s $\frac{1}{8}$. O. S. + .25s \bigcirc + .50c axis 150 $\frac{1}{8}$.

Case 3.—Mrs. A., aged 46; at present in good health, suffering only from headaches attributed to eye-strain and some conjunctival irritation; has had two attacks of puerperal fever, the last with her youngest child, now in his seventh year. In each eye round discs with sharply marked scleral rings, especially below, and in each macular region to the disc side of the fovea several yellowish splotches spotted over with small pigment dots. O. D. + 1.25s \bigcirc + .60c axis 75 $\frac{1}{8}$. O. S. + 1.50s \bigcirc + .50c axis 105 $\frac{1}{8}$.

Case 4.—Miss M., aged 10; recently has had

¹ Dr. G. M. Gould (Archives of Ophthalmology, Vol. xix, p. 37) reports eight cases to illustrate the hypothesis that central choroiditis is due to ametropia, and suggests the name ametropic choroido-retinitis.

sore throat (diphtheria?); has had malaria; feels a film over the eyes; much brow pain. In each eye numerous fine dots the size of the prick of a pin and of yellowish color. The urine contains albumen and tubé casts. O. D. 1.50 $\frac{3}{8}$. O. S. 1. $\frac{3}{8}$.

Case 5.—Miss P., aged 24; pain in the eyes, worse when reading; claims to be in good general health, but is readily tired; pain in the back, face pallid and slightly puffy beneath the eyes. Urine of low specific gravity; small hyaline casts. In the right eye the disc is round, the lymph sheaths full, and the macula contains several granular spots. In the left eye the disc is oval, the lymph sheaths full. In the macula granular dots, and one small yellowish patch below the fovea.² O. D. + .25c axis 95 $\frac{3}{8}$. O. S. + .50c axis V $\frac{3}{8}$.

Any influence of refraction error in these cases probably may be eliminated, and this has simply been recorded for the sake of uniformity. In two of the cases the presence of renal disorder renders the explanation of macular change of ready demonstration. They have been referred to chiefly because they represent a large class where very fine lesions in the macula, which do not in any way influence central vision, which can often be found only by the most careful focusing, and yet which direct attention to an examination of the urine, with the results detailed in Cases 4 and 5. I have on a number of occasions had cases of this character referred to me by competent general practitioners, who were not a little amazed when I sent them word back that the headache which they had supposed due to eye-strain, and consequently coming within my province for treatment, was a headache in all probability due to renal inadequacy, and belonging to them. These cases are in no sense albuminuric retinitis, and I have watched them for long periods of time and they apparently do not develop into albuminuric retinitis. They stay simply where they are, and in some minor degree are an index of renal change; moreover, of a renal change which is apparently perfectly compatible with what appears to be good general health. Perhaps investigation would show that such cases are present in the examples of so-called transient albuminuria; perhaps they are only coincidences—but be this as it may, they deserve attention. In two of the other cases (Case 1 and Case 3) renal change was no doubt at the bottom of the lesion; the one a case of chronic gout with gouty kidneys, and the other in a woman who had attacks of puerperal fever. They are interesting only in the fact of the smallness of the lesion and the presence of accompanying perfect central vision. In Case 2 the fact that the patient had yellow fever, and was the subject of uric acid diathesis in a minor degree,

is of interest. I have elsewhere reported not macular changes, but decided general retinal disturbance in association with oxaluria. Perhaps this case is analogous.

In a number of instances exposure to intense light (sunlight, electric light), has resulted in the appearance of a persistent after-image. Corresponding to the central scotoma evidences of retinitis or retino-choroiditis have been found in the macula. It is to this class of cases that the final group belongs, of which I have only one example to quote.

GROUP 5.—*Slight macular changes—the apparent result of exposure to a bright sunlight.*

Case 1.—Miss B., aged 22, complains of a dark spot before the right eye which followed prolonged exposure to the glare of a sunset upon the ocean, the patient having watched this for a long period of time. No headache, no asthenopia. A careful examination by the family physician discovered no constitutional derangement. In the right eye an irregularly oval disc with central excavation, and in the right macula a dark area, and up and in from the fovea a number of fine, faintly marked, yellowish-white dots. In the left eye no similar dark area, but one or two fine dots. No dark spot complained of before the left eye. O. D. + .50s \bigcirc + .25c axis H. $\frac{3}{8}$. O. S. + .75s \bigcirc + .25c axis 120 $\frac{3}{8}$.

The dark area in this case was noted two years ago. It persists still, only the scotoma has grown exceedingly faint, and there has been corresponding fading of the macular changes. That this is really an after-image and is on the retina, is evident from the fact that it obscures but does not hide real objects, moves with the motions of the eye, and is projected when the observer looks upon a dark ground. These are the points which Dr. Tuke, in his article on "Hallucinations and the Subjective Sensations of the Sane," considers characteristic of the after-image of a luminous object. An interesting point in this case is the fact that in the right or affected eye there was a patch darker than the surrounding retina which was the cause of the scotoma, both maculas contained yellowish dots, but evidently independent of the influence of the intense sunlight. The lesion, then, was somewhat analogous to that which has been described under the title of *commotio retinae*. It is not my purpose to discuss macular disease from intense light, but I have quoted this example as one having all the symptoms of this disorder save only that perfect central acuity of vision was preserved. It may be interesting, however, to note that there was no change in the periphery of the eye-ground, that the field of vision was normal, and that an attempt to map out a positive scotoma on the perimeter was not possible.

In the absence of microscopical examination it

² Cases 4 and 5 have been referred to in a paper before the County Medical Society of Philadelphia, read April 23, 1890.

is idle to discuss the pathology of these small lesions. They appear to arise in the choroid, and to partake of the nature of a spot of degeneration indicating the portion supplied by a single capillary loop, but not of sufficient extent to seriously involve the retinal elements and produce depreciation of central vision. It is not improbable that some of them may be congenital (in those examples in which no other cause was found), or that they have arisen under the possible influence of refraction error, certainly in some instances through constitutional disturbance; and have found their habitat in that portion of the eye-ground which experience has taught is liable, especially in people with a predisposition to macular disorder, to degenerative changes.

DR. RANDALL asked to emphasize Dr. de Schweinitz' note that in many of these cases full normal vision was present, generally without even relative scotoma; and, further, that even where renal trouble has been found by clinical and microscopical tests there has seemed to be no tendency to an increase of the lesion, but, on the contrary, the lesions rather tend to fade. The albuminuria has proven transient, and no albuminuric retinitis has occurred.

DR. T. E. MURRELL, of Little Rock, Ark., said he saw a case of macular spot—a shadow over the macula, caused by viewing the transit of Venus over the sun's disc with the unaided eye.

DR. CHEATHAM said in reference to Dr. de Schweinitz' cases that only last week he saw a case of central retinitis with H. 3.25 D.; this patient had been exposed to very bright light also. V. = $\frac{1}{3}$. He had seen many cases of marked changes at macula, with central blindness, dating back to the total sun eclipse years ago.

DR. ROBERT TILLEY, of Chicago, has seen some of these cases of macular changes, and has been accustomed to regard them as an evidence of specific lesions either primary or hereditary, and remembers one case in point in his recent practice, in which he had supposed that he had obtained advantage over a brother practitioner in seeing the case a little later, when these spots were more readily observed. At any rate, while weak plus glasses were previously given without satisfaction, the exhibition of specific remedies gave relief and the glasses were cast aside.

DR. DE SCHWEINITZ wished to be understood that the cases of macular change which he reported were entirely independent of the syphilitic taint, and were unrecognized by the patient because they gave no inconvenience. The case of macular disease from intense sunlight was peculiar only in the possession of perfect central acuity of vision. Dr. de Schweinitz thought it had been experimentally shown that the direct influence of sunlight was the cause of the retino-choroidal macular change.

MALARIA AND THE CAUSATION OF INTERMITTENT FEVER.

Read in the Section of Practice of Medicine, Materia Medica and Physiology at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY HENRY B. BAKER, M.D.,
OF LANSING, MICH.

Dr. Tommasi-Crudeli and others have claimed that intermittent fever is caused by a bacillus.

Drs. Laveran, Osler, Council and others have proved, to their own satisfaction at least, that intermittent fever is caused by a microscopic hæmatozoön.

At the meeting of the American Medical Association in Cincinnati, in May, 1888, I presented what I then considered and still consider to be incontrovertible evidence that intermittent fever is caused by exposure to changes of atmospheric temperature,—that, ordinarily, its causation is quantitatively related to, and apparently controlled by the range of atmospheric temperature.¹ It seems to me that both these lines of evidence, which appear to be so divergent, may be true. I feel sure that my own line is. And I have very great confidence in those who have presented the other line of evidence in which they are expert.

Therefore, although those who have held the germ theory of the causation of intermittent fever have not, so far as I know, accepted the evidence which I have collected and published, yet I feel impelled to again ask attention to it. I attempt this the more readily, because the facts and considerations, which it seems to me to make it appear possible that both lines of evidence may be true, were, in the main, held in mind when I read my paper two years ago, but there was not then time to elaborate, and I, therefore, only referred to but did not fully state them.

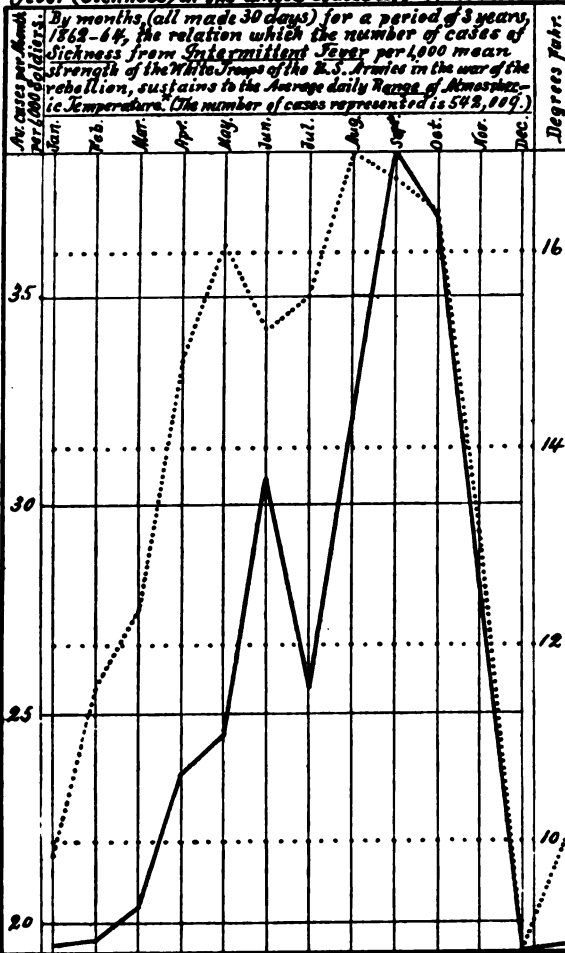
I suppose that all here are probably familiar with the literature of the subject of the bacillus of malaria, and also that relative to the hæmatozoön of malaria, discovered by Laveran. I may, therefore, devote my time exclusively to that other phase of the subject, on which I have collected evidence, and which is probably little known.

The most important evidence which has been presented by myself is as follows:

1. Statistics of sickness from intermittent fever in Michigan during a long series of years, arranged to show the relation of intermittent fever to changes in atmospheric conditions, and which have proved, to my mind, that the controlling condition is associated with atmospheric temperature, the sickness rising and falling with the temperature. This is shown by Diagram No 3², which is one of a series prepared to illustrate my previous paper.

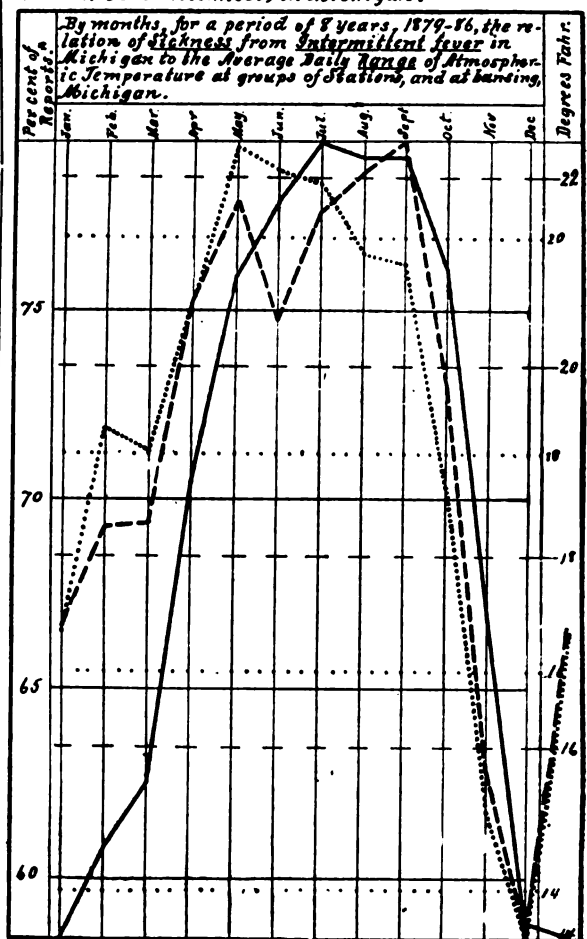
¹ "Malaria and the Causation of Periodic Fever," Journal Amer. Med. Association, Nov. 10, 1888. ² Page 563.

No. 1.—Range of Atmospheric Temperature, and Intermittent fever (Sickness) in the United States Armies.



Sickness — Average daily Range of Temperature
 *The sickness is compiled from the Medical and Surgical History of the war of the rebellion. The range of Temperature is compiled from a table on page 134 of the Smithsonian Tables Distribution and Variation of the Atmospheric Temp. in the U.S. It is for a period of 8 years, 1862-69, at Naval Observatory, Washington, D. C.

No. 2.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in Michigan.



Sickness — Average daily Range of Temperature
 Average daily Range of Temperature at Lansing
 *Indicating what per cent of all reports received stated the presence of Intermittent fever then under the observation of the physicians reporting.
 Over 35,000 weekly reports of Sickness are represented in this diagram.

TABLES FROM WHICH ACCOMPANYING DIAGRAMS WERE DRAWN.

No. 1.—Sickness from Intermittent Fever in the U. S. Armies, in 1862-4, and Range of Atmospheric Temperature.

	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Intermitt. fev. (a)	19.4	19.6	20.4	23.6	24.5	30.6	25.6	32.0	38.5	36.8	28.1	19.3
Av. range of tem.	9.87	11.55	12.36	14.88	16.10	15.21	15.57	17.01	16.76	16.41	13.12	8.87

No. 2.—Sickness from Intermittent Fever in Michigan, and Range of Atmospheric Temperature.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Intermittent fever (b)	58.4	60.8	62.5	70.4	75.8	77.8	79.5	79.0	79.0	76.1	67.0	58.8
Av. range of temp. (Mich.)	16.34	18.23	18.02	19.41	20.83	20.62	20.50	19.84	19.74	17.69	14.69	13.56
Av. range of temp. (Lansing)	17.25	18.29	18.33	20.67	21.72	20.46	21.61	22.05	22.35	19.81	15.73	13.99

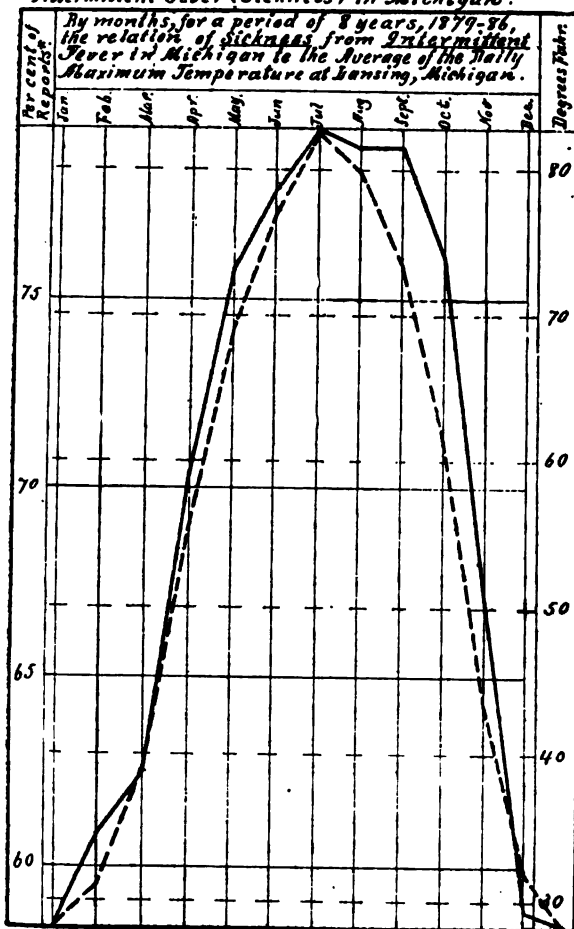
No. 3.—Sickness from Intermittent Fever in Michigan, and Maximum Atmospheric Temperature.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Intermittent fever (b)	58.4	60.8	62.5	70.4	75.8	77.8	79.5	79.0	79.0	76.1	67.0	58.8
Max. temp. at Lansing	28.2	31.1	39.1	55.7	69.2	77.0	82.3	79.9	73.5	61.3	43.3	31.9

(a) Average cases per month per 1,000 soldiers.

(b) Per cent. of weekly reports which stated the presence of intermittent fever.

No. 3.—Maximum Atmospheric Temperature and Intermittent Fever (Sickness) in Michigan.



Sickness—Average maximum Temperature
 *Indicating what per cent of all reports received, stated the presence of Intermittent Fever then under the observation of the physicians reporting.
 Over 35,000 weekly reports of sickness are represented in this diagram.

2. Statistics relative to intermittent fever in the United States Armies, elaborated from the medical and surgical history of the war of 1861-5. This evidence is graphically shown in Diagram No. 1.*

An abstract of a summary of conclusions based upon the evidence which I collected, is as follows:

"2. The controlling cause of intermittent fever is exposure to insidious changes, or changes to which one is unaccustomed, in the atmospheric temperature.

"3. In the mechanism of the causation of intermittent fever, the chief factor is the delay in reaction from exposure to cool air; this delay, extending to a time when greater heat-loss should occur, results in the abnormal accumulation of heat in the interior of the body, and in disturbed nervous action—the chill; and the final reaction is excessive because of the accumulation of heat,

and, sometimes, because it occurs at the warmest part of the day.

"4. The fever is the excessive reaction from the insidious influence of the exposure to cool air; and it is periodical because of the periodicity of nervous action, and, because the exposure and the consequent chill are periodical, owing to the nightly absence of the warmth from the sun.

"5. Residence in valleys or low lands through which or upon which cold air flows at night, and thus causes insidious changes in the atmospheric temperature, favors intermittent fever.

"6. In our climate, those measures, such as drainage, which enable the soil to retain warmth during the night, and thus reduce the daily range of temperature immediately over such soil, tend to decrease intermittent fever among residents thereon.

"7. In the cure and prophylaxis of intermittent fever, those remedies are useful which lessen torpidity and tend to increase the power of the body to react promptly to insidious changes in atmospheric temperature."

Preparing, now, to forge a link, in the chain of evidence, which was omitted from my paper, Sir William Moore, who has had great experience and observation in India, says: "So-called malarious fevers are caused by sudden abstraction of heat, or chill, under the influence of cold, and more especially of damp cold. These effects of chill are more marked in hot climates, because of the antecedent exposure to great solar heat, the anaemia and skin debility resulting from heat and the disregard of suitable precautions."

I think that my statistics indicate that another reason, for there being most intermittent fever in hot climates, is because the difference between the day and the night temperatures is the greatest in hot climates, and, consequently, the demands upon and resulting disturbances of the heat-regulating apparatus of the body are greatest in hot climates.

Intermittent fever is most prevalent in hot climates. In temperate climates, intermittent fever is most prevalent in the warm months. Here a reason similar to that just given applies,—it is then that there is greatest difference between the day and the night temperatures.

I believe that perspiration is probably a factor in the causation of intermittent fever. I do not base this opinion merely upon the facts just stated,—relative to place and time of greatest prevalence; but mainly upon two facts as follows: Perspiration tends to cause chill, because of the fact that evaporation from moist clothing tends to lower the temperature rapidly. I believe that a chill, especially at the warmest time of the day, is, not infrequently, sufficient to start the disease intermittent fever. Excessive perspiration tends to

* Jour. Amer. Med. Assoc., Nov. 10, 1888.

5 London Lancet, also Medical Age, Detroit, Feb. 10, 1890, p. 66.

change the condition of the blood; and chill tends to change the condition of the blood, in some such way as follows: When the surface of the body is strongly contracted, the blood is driven from all the surfaces, the circulation is impeded, the blood parts with some of its fluid, and, with it, the salts, which pass into the urine; then there comes a demand of the tissues for blood, thirst is great, which, when satisfied, again fills up the blood-vessels. This rapid changing of the proportion of fluid in the blood tends, I believe, toward the solution or breaking up of the red-blood corpuscles. My belief is that the destruction of the red corpuscles is greater than it would be if only the proportion of water in the blood was changed,—that the destruction occurs partly through a disturbance of the proportion of certain salts in the blood. It is not difficult to see how this may be: Excessive perspiration takes out salts, especially sodium chloride, in considerable quantity; the urine passes out salts in considerable quantity. On the other hand the water drunk to quench the thirst, does not ordinarily take salts into the blood. (Except in cases where common salt is given as a remedy, which is sometimes done by non-professional persons.) According to experiments made many years ago, in the circulating blood, in health, the red corpuscles are preserved by sodium chloride from being dissolved in the albumen.* As this paper is not an exhaustive treatise on this subject, but is intended to be suggestive to other investigators, I do not now attempt to collate recent evidence on the changes in the blood. In order, however, to account for the destruction of the red corpuscles, the formation of the pigment, and for the phenomena of intermittent fever, I see no need for the micro-organism which is alleged to be parasitic in the blood, in intermittent fever. It seems to me that all of the phenomena can be accounted for about as well without the parasites as with; but it seems to be a general fact in nature that whenever a highly-organized being commences to break down, there are generally organisms that await the occurrence, and when the breaking down process is of elements microscopic in size, I believe that microorganisms are generally there. I accept the evidence of the eminent men, who have reported that they are present in the blood in intermittent fever.

But if we grant that malarial fever is caused by microorganisms, parasitic in the blood, it has remained to be explained how it is that the microorganisms only cause intermittent fever under certain conditions of the atmosphere. That intermittent fever does occur under some conditions, and does not occur under other conditions, has long been positively known. I claim that the statistics which I have collected prove what those

conditions are; and that the relation of those conditions to intermittent fever is quantitative and causal. I refer more especially to the evidence (exhibited in Diagram No. 1) relative to the half million and more cases of intermittent fever which occurred in the United States Armies, during the war, in 1862-4; and to the evidence of the recorded experience of physicians in Michigan, during eight years, which is exhibited, in graphic form, in Diagrams Nos. 2 and 3.

SOME OBSERVATIONS ON THE CORRECTION OF LOW DEGREES OF ASTIGMATISM.

Read in the Section of Ophthalmology, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY T. E. MURRELL, M.D.,
OF LITTLE ROCK, ARK.

Perhaps no two men entertain identical views, or have like experiences in all particulars in the matter of correcting ametropia. All fixed rules must bend to the inevitable exceptions, and certain general principles only can be said to obtain upon which experience and judgment found creditable results.

It was taught by Donders that it was seldom necessary to correct an astigmatism of less than 1 D. This hypothesis was based upon the practical sharpness of vision. It was considered that when vision is so nearly normal a slight error should give rise to no appreciable annoyance. Larger experience and more extended observations have led to quite different conclusions. We now know that an astigmatism so slight as to be scarcely appreciable by ordinary tests may be the source of very considerable discomfort when the eyes are much employed.

Since so few eyes are absolutely free from corneal astigmatism, the question arises: Where shall the line be drawn between the normal and the abnormal? To every one of large experience in this class of work the answer readily comes up: It is largely a matter of clinical experience and not of optical perfection; since we observe many persons with much astigmatism who make little complaint, while in others, with the smallest appreciable degree, there are the most distressing symptoms.

In the earlier years of my ophthalmic work I was disposed to follow the great master, whose text-book was my sole guide, and ignored all cases where the astigmatism was appreciably less than 1 D. The trial cases made at this time contained no cylinder less than about 1 D. I found myself, however, recording accommodative asthenopia, hyperæsthesia of the retina and various neuroses for which I could not account and for which I could find no remedy. Shrewd observers were

* Dalton's Human Physiology, First Edition, page 56. Human Physiology, Flint, Fourth Edition, 1888, page 432.

not slow to find a clue to these troublesome phenomena. The more that low degrees of ametropia were corrected the less were the number of cases of hyperæsthesia of the retina, accommodative and retinal asthenopias and like obscure conditions.

It is probable there are not so many more persons now possessed of astigmatism than in former years, but the higher development of the perceptive centres has created a demand for greater sharpness of vision and, at the same time, universal education has imposed greater tasks on the eyes than ever before.

Together with these demands come the enervating influences of a high grade of civilization, rendering doubly susceptible all the reflex centres. In addition to this the widely known successes of ophthalmologists lead people to consult them who would in former years have suffered their inconveniences and annoyances of sight in silence. These are doubtless the prominent factors in the immense requirement for astigmatic spectacles.

The eye that is highly trained has a very keen sense of the relative distinctness of test objects. In correcting astigmatism I find it very important to be as exact as possible. I formerly had much of my work to do over by thinking relief would follow if only approximate correction was made, just so the strain was taken off. They sometimes complained worse than without a glass. A person may have an error of 0.25 D. and, with normal, perhaps more than average, sharpness of vision suffer no inconvenience whatever; while if he has an astigmatism of 0.50 D. or 1. D. and an error of 0.25 D. or even less is made in the correcting glass, he will surely make complaint.

A young man once consulted me for eye-strain and nervous troubles, pronounced spinal in origin by his family physician. I discovered a myopic astigmatism for which I prescribed — 1. D.c. 180° for each eye. These were worn for two years, but gave very little relief. Vision was sharp with them too. He was then tried for some time with — 0.50 D.c. 180° each eye, with which he seemed to see equally well as with the first glass. These gave only partial relief. Finally a — 0.66 D.c. 180° each eye was ordered, and with these he has had perfect comfort, all eye-strain completely disappearing in a short while, and now, after nearly a year, he expresses himself as still delighted with his great boon in the possession of the magical glasses. The last change made in his glasses, which brought such relief, amounted to only about 0.16 D.

In another instance I found 0.50 D.c. too strong and 0.25 D.c. too weak, and obtained perfect comfort with 0.33 D.c. This gentleman is to-day one of the most grateful friends I have. A lawyer by profession, he had nearly decided to abandon his profession for some non-literary pursuit on account of persistent and troublesome asthenopia

whenever he would read. With his glasses he now has no trouble, and has started afresh with his professional work.

These may seem very fine distinctions, but they are correct observations accurately and faithfully made. I can very readily conceive how less degrees of astigmatism than are ordinarily corrected may give rise to annoyance in highly neurotic persons, but I rarely find use for the 0.25 D.c. some persons are now prescribing so extensively. There are very few persons whose vision will not be sharpened by a + or — 0.25 c. at some particular angle. In my own case a + 0.25 c. 90° for O. D. and 135° for O. S. materially sharpen Snellen, but I cannot wear these glasses for even a few minutes without distress. I have never felt the need of glasses in my work.

My experience leads me to the employment of a mydriatic in determining astigmatism. I am becoming more and more convinced of its importance. I use atropine only. Homatropine has so often misled me I have altogether abandoned it. It will rarely completely paralyze the accommodation, which is essential if a mydriatic is used at all.

It is sometimes necessary to instil into the eyes a 1 per cent. solution of atropine three times daily for several days before complete relaxation of the accommodation will be produced. The astigmatism found in total paralysis of accommodation is, according to my experience, the actual astigmatism of the eye, and the glass that corrects it will, in the end, prove the most satisfactory glass.

I believe that the partial correction of corneal astigmatism by some undefined manner of irregular contraction of the ciliary muscle, by which an astigmatism found during paralysis of accommodation disappears on the return of accommodation, is the cause sometimes of incorrigible asthenopias. According to my experience an astigmatism found under atropine exists in reality without it, however much it may be masked by accommodative action, and the persistent wearing of the correcting glass will eventually suspend the action of the no longer necessary compensating accommodative effort and with it bring perfect comfort and rest to the eye.

The opposite of this rule will not hold, for an astigmatism found in full accommodation will often disappear under suspension of this power.

A girl 15 years old consulted me by advice of her physician for headaches, to see if they were not due to eye-strain. I found that a + 0.50 D.c. 90° very decidedly sharpened V. in both eyes. These glasses were repeatedly tried with the same results every time—almost doubling the acuteness of V. They were ordered. At first they suited admirably. At the end of a week she returned with the complaint that her glasses no longer gave comfort. A 1 per cent. solution of atropine was instilled into each eye three times daily for three

days and she was again examined. There was now no astigmatism to be found, but only a total hyperopia of 0.75 D. Since the return of accommodation there has been no further astigmatism found and no further complaint. Such cases as this are right often met with, and offer another argument for the use of a mydriatic in determining all errors of refraction and especially astigmatism. This so-called lenticular astigmatism has received a good deal of attention of late. As to its correction a question is involved bearing upon the theories I have here advanced.

The importance of atropine in ascertaining the exact error of refraction is well illustrated in the following case: Mrs. H., aged 26 years, was ordered + 1. D.c. 90° for each eye nine years ago by a well-known ophthalmologist. Two years ago the same gentleman prescribed for her + 0.50 D.c. 90° for each eye. Neither of the glasses relieved a peculiar weariness more or less constant in the eyes. On consulting me not long since, I found she saw best with the + 1. D.c.; it raising V. from Sn. $\frac{1}{8}$ to $\frac{1}{4}$, and with it she could read J. 1 fluently.

I told her I could not be positive whether the trouble was in her eyes or not without using atropine. She consented to it, and a 1 per cent. solution was dropped in each eye three times daily for three days. I now found astigmatism = 1.75 D. 180° in O. D. and astigmatism = 1.50 D. 165° in O. S. Glasses were ordered as follows: O. D. + 1.75 D.c. 90°; O. S. + 1.50 D.c. 75°.

She was directed to wear these constantly. A little awkward at first, her eyes became more and more comfortable, and at last accounts she was highly pleased. In low degrees of astigmatism I have often found V. = $\frac{3}{8}$, with full play of the accommodation, reduced to $\frac{1}{4}$ or $\frac{1}{8}$ under atropine, when the astigmatism becomes an easy problem.

Each of the points brought out in this paper could be fully illustrated from my record book were it worth while. I trust that the narration of my own experiences and observations will call for expressions of opinion from others of larger experience in this particular line of work.

DR. FROTHINGHAM said: As the results of experience are of such importance in the consideration of a question of this kind, I wish to say that I now correct low degrees of astigmatism in nearly all cases of persistent asthenopia. I use atropia less often than formerly, as I find that in many instances I can sufficiently correct the ametropia without resorting to its action. In many cases the patients will not submit to a sufficiently prolonged use of it, or even to a brief action of it, so long as it is possible for them to use the eyes at all. They plead that it is impossible for them to stop work and suffer the inconvenience its action would cause them. In cases of severe

and persistent asthenopia the thorough action of atropia becomes almost imperative and the action of more transient mydriatics possesses no advantage, for prolonged rest of the ciliary muscle becomes necessary. There are cases, however, in which it becomes necessary to know the exact static refraction of the eye in order to prescribe even temporarily. Here the action of homatropine is very valuable. By its action we can often get the desired information in the case of patients who would not submit to the action of atropine, which lasts so much longer.

DR. RANDALL stated that his paper dealt with several of the points raised, and he would forestall it by speaking as to them now. He wished to reiterate the points elsewhere made that ametropia is the rule—astigmatism as well as hypermetropia being found in the majority of cases. Adults as well as children show these errors, the assumption that they are outgrown being wholly unproven. Refraction error is to be expected, therefore, in most cases, whether eye-patients or not—whether it needs correction is, however, a question to be decided only on the merits of each individual case. Small errors may be very important. Accuracy often demands a mydriatic, and hyoscyamine seems the best in most cases, as it is less apt to cause constitutional symptoms than duboisine, passes off in half the time required by atropine, yet gives full three days of total rest after the last instillation (where atropine gives but two), and enforces only two days of returning accommodation instead of eight or ten days, as after atropine. Many cases cannot be measured under mydriatics, even homatropine, but the refraction as measured under full paralysis of the accommodation is the true basis of our study.

DR. LEARTUS CONNOR, of Detroit, Mich., said that 1. If possible the examination of all cases of asthenopia should be conducted under the influence of atropine, as this saves time and promotes exact accuracy. 2. But practically such use is impracticable, owing to the engagements of patients. Further, an experience with several thousands of cases shows that the results of correction of refractive error are usually satisfactory when made without atropine. In fact, a comparison of these results with those obtained under atropine is favorable—the relief to the patient being equally satisfactory. 3. Atropine I have found far more satisfactory than other mydriatics. 4. The use of small degrees of astigmatism I esteem more highly with extending observations of their results. But I do not use them unless the general condition of the patient is normal and a distinct asthenopia continues.

DR. J. H. THOMPSON said he could not agree with the custom of fitting in a routine manner very small degrees of astigmatism, inasmuch that an appreciable astigmatism of low degree, 0.25,

is not by far the cause of the asthenopia complained of. The more I practice the more I am convinced that atropia is not necessary in all cases. In children under 14 years atropia may be advantageously used, but in adults its use may be more annoying than beneficial. Astigmatism and hypermetropia may be corrected very early in adults without a mydriatic. In presbyopia with astigmatism it may be sometimes necessary, but should be avoided if possible. I have reasonably good results without atropia. Low cylinders, especially in minus, are fascinating and will be in many cases accepted, but that is no indication that the glass is necessary or proper for asthenopia. Many cannot, with an anatomically normal eye be dependent upon lowered muscular or nerve tone. Correcting the astigmatism in such cases will not give permanent relief.

DR. HORTZ, of Chicago, said that he uses homatropine and saw no reason from his own experience to question its efficiency and reliability, and if it answers the purpose for our refraction tests it certainly is preferable to atropine. Though the result under suspended accommodation gives the true refraction, it is seldom practicable to give the glasses this refraction calls for. The astigmatism can and must always be fully corrected, but for the common hypermetropia I find the patient will not accept a full correction; the glass has to be $\frac{1}{2}$ D. less, and sometimes even more of the hypermetropia must be left uncorrected; if you correct more, the glasses will cause as much discomfort as a faulty correction. Perfect vision and the comfortable use of his eyes is what our patient wants, and therefore correct the error of refraction—no matter how great or how little—so far as necessary to attain this end.

DR. LEWIS H. TAYLOR, of WilkesBarre, Pa., said: I have been much interested in listening to the paper just read, and am glad to hear the speaker say that he uses atropine in correcting astigmatism. I almost invariably use it, and for some years past have discarded other mydriatics, homatropine and dubosine especially in my hands being unsatisfactory. I do not quite agree with the speaker as to the uselessness of the quarter dioptre cylinder. I have had considerable experience in its use and have found in many cases most beneficial results, especially when the correction has been made with atropine.

DR. LIPPINCOTT said: In regard to the use of a mydriatic, the circumstances of many of my patients do not permit me to paralyze the accommodation. In such cases I endeavor by repeated examinations to estimate the refractive error, on the principle that half a loaf is better than no bread. However, I consider the use of the mydriatic desirable wherever possible, not only because it tends to secure an accurate result, but because it enables us to obtain the result rapidly, thus saving much time.

As regards the correction of low degrees of astigmatism, I not very infrequently prescribe a cylinder as low as a quarter of a dioptic. It may be remarked that even if the glasses are subsequently laid aside, this fact does not argue against the correctness of the prescription, because it sometimes happens that the necessity for a glass arises from a neurasthenic condition which may last only during a short period, during which the patient is tided over his difficulty by the use of the cylinders.

DR. JACKSON: I believe there is a state of static refraction revealed by the efficient use of any of the mydriatics named. On account of the brevity of its action I, therefore, prefer homatropine for purposes of diagnosis only. It is very generally forgotten that the glass giving the best vision at 15 or 20 feet is not the correction of the ametropia but for hyperopia, an over-correction of $\frac{1}{4}$ D. This over-correction will be annoying as long as it lasts. But the true correction, if annoying at first, will in time disappear entirely.

ON THE UNITY OF DIPHTHERIA AND MEMBRANOUS CROUP.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY D. BRYSON DELAVAN, M.D.,
OF NEW YORK.

The discussion of this apparently trite and timeworn question would seem out of place at this meeting, were it not that, even at the present day, we are still unable to speak with certainty concerning it.

The failure to have secured a more definite conclusion regarding it is in no wise due to lack of care on the part of those who have investigated it. On the contrary, it has engaged the attention of a large number of earnest students; the subject has been studied collectively as well as by individuals, and, finally, the diseases in question are of such common occurrence that abundant material has always been forthcoming upon which deductions could be based. With all this accumulation of material and of effort it would seem strange that sufficient doubt should remain to warrant discussion.

We find, however, in studying the differential diagnosis between diphtheria and croup as commonly given, that there are many conditions which are far from being constant.

Thus, it is tolerably well established that in diphtheria the disease is usually due to some apparent cause of infection; that the diphtheritic poison is itself highly infectious; that the membrane may not be confined to the larynx, but may appear in the throat above that organ; that its presence is generally attended with swelling of the cervical glands; that albuminuria is a fre-

quent symptom of it; and that the appearance of the diphtheritic membrane is characteristic.

On the other hand, it is said that the so-called croupous exudation occurs spontaneously and without the history of infection, while it is not itself infectious; that the membrane does not extend beyond the larynx; that there is no swelling of the cervical glands; that there is no albuminuria; that the appearance of the croupous exudation is distinctly different from that of the diphtheritic.

Unfortunately, the exceptions to the above differential points are so common as to throw discredit upon them and much impair their value. It must be conceded that the causes of infection in diphtheria are sometimes exceedingly obscure and difficult to trace, so that in studying them many sources of error may arise. Again, all forms of diphtheria do not appear to be equally infectious. Cases of supposed croupous laryngitis have been seen in which the croupous exudation appeared also upon the fauces. Swelling of the cervical glands and albuminuria have been seen in croupous laryngitis. Finally, from the usual appearances alone of the exudate it is often difficult to determine the true nature of the disease.

The above hasty analysis of the question from a clinical standpoint indicates that investigation has served rather to hinder than to help in the establishment of a reliable standard of differential diagnosis.

Fortunately, the advances made in modern pathology have enabled us to rely for proof in such matters upon evidence other than that given by the rational symptoms of disease, and when the resources of the clinician fail there is left an appeal to a still higher authority, namely: to the microscopist. While in the present discussion the clinical evidence is largely negative, from the microscopical investigation of diphtheria results have lately been reached which give rise to the hope that at no distant day a positive and definite standard may be attained, by which this disease may be isolated from all others, and the question of the unity or duality of laryngeal exudation be finally settled. Löffler (*Deutsch. Med. Woch.*, January 30 and February 6, 1890), and Prof. T. Mitchell Prudden (*Amer. Jour. Med. Sciences*, April and May, 1889), have reported excellent bacteriological observations upon this subject. The investigations of the latter, made in the bacteriological laboratory of the College of Physicians and Surgeons, New York, are exceedingly valuable and interesting. This observer found that, in diphtheritic matter obtained from various sources, a certain form of streptococcus was always present. To this species he has given the name "streptococcus diphtheriæ." Comparing it with those species of bacteria already known and described he finds that, in its forms and modes of growth, as well as in its effects when

injected under the skin, or into the blood of animals. It appears to be identical with the two well-known species called "streptococcus pyogenes" and "streptococcus erysipelatos." In view of the above we may indulge the hope that the differential diagnosis between diphtheria and croup, doubtful when regarded from the clinical standpoint, may, in the light of bacteriological investigation, become clearly and definitely established, and that this question, at once so difficult and so important, may at last be set at rest.

PROFESSOR FLINT'S DOCTRINE OF THE SELF-LIMITATION OF PHTHISIS.

Read at the Sixteenth Annual Meeting of the Mississippi Valley Medical Association, at Louisville, Oct. 8, 1890.

BY WILLIAM PORTER, M.D.,

PROFESSOR OF LARYNGOLOGY AND DISEASES OF THE CHEST IN THE ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS; FELLOW OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION; EX-PRESIDENT OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Sometime before his death Prof. Flint promulgated the doctrine of the self-limitation of phthisis, and presented it with all of his well known power and great ability to the profession. This very interesting proposition was at the time the subject of free debate in various medical societies, and at a former meeting of the Association I had the honor to partially discuss the position taken by this learned teacher and writer.

The recent years have been full of the wonderful results of the study of pulmonary disease and bacteriologic research, and the possibility of a positive diagnosis has overshadowed the equally interesting question of prognosis. That Prof. Flint's arguments, however, have not been lost to the profession is evidenced by the repeated references to it in recent current medical literature, and many are ready to say with Prof. Stephen Burt, of New York, that "not a few cases of phthisis have a self-limitation." This author, in a valuable paper entitled "Pulmonary Consumption in the Light of Modern Research," read before the New York Academy of Medicine, and published in the *Medical Record*, April 12, 1890, takes the tenable position that "phthisis is an infectious disease, only the soil must be fertile or the bacteria will not take root and grow; that the inheritance of the affection is simply the descent of the degraded cells presenting a vulnerable point for the vagrant germs; that all specific treatment is futile; and though persistent destruction of the infectious matter is our best means of prophylaxis, yet to restore the vitality of the lung tissue is as important as to destroy the tubercle bacilli." Following this comes his affirmation of the possibility of the self-limitation of phthisis. In Pepper's elaborate "System of Medicine," Vol. iii, p. 393, Flint again affirms his

statement that in certain cases of phthisis "the disease may be said to be self-limited."

It is a just inference that this idea has been well received by many excellent physicians and that it has made a deep impression upon the mind of the profession, not more on account of its great champion than because of its plausibility and desirability, for truly as one author says, "it is a comforting thought to the afflicted," and we would add—to the physician also.

I can bring no more interesting question before you; it touches us at all points where we attempt to save life from this dread disease, and it is inseparably connected with our opinion regarding the future of a large proportion of our patients. It is right, therefore, that we should have some fixed idea as to the existence of self-limitation of phthisis and its value in any given case or series of cases.

After having carefully examined the facts cited in support of the proposition, I have no hesitation in distinctly asserting that I find no sufficient evidence to warrant us in accepting the statement that phthisis is self-limiting, or that the element of self-limitation has a decided influence upon the result in any given case. I do not mean that all cases of phthisis necessarily die from this disease, but I do mean that where phthisis is firmly established, there is nothing in the nature of the disease itself that indicates in any stage a fixed boundary—a line of demarkation as it were, but rather that all of its tendencies are progressive and downward.

It is well that there should be in all debate a clear understanding as to the meaning of the meaning of the terms employed, and at the outset I am perfectly willing to accept Flint's own definition not only of the term "self-limiting," but also of the word "phthisis."

Permit me then to quote in full his definitions as given in his argument: "A disease is self-limited when it ends in recovery irrespective of extrinsic influences derived from either hygiene or therapeutics. A patient, whatever be the disease, who recovers without any potential remedies or measure of treatment having been employed, and where there has been no material change in any of the circumstances pertaining to daily life, owes the recovery exclusively to self-limitation." To this we readily agree.

He then defines the terms pneumonic phthisis and pulmonary consumption and says: "I shall consider the terms as applicable to all cases of phthisical disease exclusive of acute tuberculosis and interstitial (fibroid) pneumonia." That there may be no mistake as to his use of words I may add that he uses the terms phthisis, pulmonary tuberculosis, and consumption in the same sense (*Prac. Med.*, p. 271). Using, then, our author's own language, the question is—is there in phthisis, or if you please, pulmonary tuberculosis,

a tendency to recovery without extrinsic influence derived from either hygiene or therapeutics?

Although as early as 1835, Jacob Bigelow, in a paper which Prof. Flint justly calls remarkable, read before the Massachusetts Medical Society, applied the term "self-limited" to certain diseases, it was not until 1858 that the latter advanced the idea of self-limitation as applied to phthisis. (*Am. Jour. Med. Sciences*, 1858.) Twenty years afterward the question was ably reopened by him in the paper to which reference has been made, and his position virtually accepted as proven.

The deductions in this important essay are based upon clinical evidence rather than argued from a pathological standpoint, and if you will bear with me I will first present an analysis which I have made of the cases which are cited by Prof. Flint, and afterward endeavor to show that the pathology of phthisis, so far as we yet understand it, is opposed to the doctrine of self-limitation.

In the first place the argument which Prof. Flint advances is founded upon the deductions made from the history of 670 cases of phthisis. Fortunately these cases are all on record, and I shall not only accept the record of each case without question, but follow his own selection, though to very different conclusions.

Among these 670 cases there were 75 in which either recovery took place or the disease became latent. It is, therefore, in these 75 cases we have to find the proof of self-limitation and by these must the proposition stand or fall. I must beg you to bear in mind as we go along, the definition that "a disease is self-limited when it ends in recovery irrespective of extrinsic influences derived from either hygiene or therapeutics."

We find that in 31 of these 75 cases the statement is merely that "the disease ceased to progress for at least several months, and in the majority of cases for several years." By reference to the record we find that the last examination of each gave evidence that the disease was still present—latent in some, as may occur in phthisis, but not self-limited; for "a disease is self-limited when it ends in recovery," etc., and these had not recovered. As according to our author's own definition 31 of these cases have no definite bearing upon the point in question, we are restricted to the study of the remaining 44.

As self-limitation is independent "of extrinsic influence derived from either hygiene or therapeutics," we at once decline the evidence of 21 of the 44 cases, for in all of these pertinent and generally persistent treatment was pursued. Moreover, three of these cases subsequently proved fatal, and the last examination showed that at least a third of them had still physical signs of phthisis. We object to these 21 histories as not

pertinent. The interest now centers in but 23. "In 15 of the cases hygienic measures constituted the treatment;" but these measures were of such a character as would lead us to hope for favorable results, viz., change of business, out of door life, rest, sea voyages, change of climate, etc. These are potential aids, for as Flint says (*Prac. Med.* p. 290), "out of door life is of all measures most important." Now, to prove a disease self-limiting, we must eliminate whatever can be reasonably traced to "either hygiene or therapeutics." These 15 cases were given the advantage of favorable hygienic condition, and who shall say they would have recovered without these conditions? Having made use of that remedy which of all others has been found efficacious in phthisis, these 15 cases are certainly not examples of self-limitation.

I have refrained from occupying your time with the details of the author's cases, which, in accordance with his own definition of limitation, have been refused as evidence. The history of these is fully given in his work on phthisis, and I have endeavored to deal fairly and justly with the record.

Let us now apply the test to 8 cases which alone remain. These are numbered 1, 4, 7, 8, 14, 20, 23 and 24 (*Phthisis*, p. 187, et seq.) and are the only ones of which the author says "there was no medical treatment of importance, and no material change in the habits of life, the recovery taking place purely from an intrinsic tendency."

Case 1 is that of a farmer, who having in the winter of 1842-43, expectorated what were thought to be pulmonary calculi, was examined in June, 1843; "the only physical sign noted was feebleness of the respiratory murmur." He was in excellent health 13 years afterward. "Prior to the development of the disease the patient had worked very hard on a farm. He left home for several weeks, and after relinquishing severe labor, engaged in buying and selling new lands in Illinois, a business which required much out-of-door life." Excellent treatment.

Case 4.—A physician aged 28 had hæmoptysis, in October, 1852, and again in January and May, 1853. In May, 1853, he had slight dulness at the right summit, with weakened respiratory murmur and crackling, which accompanied inspiration and expiration. In September, 1854, he reported himself well, "a year after recovery;" *i. e.*, his recovery must have dated from September, 1853, five months only after the above symptoms were noted. However, we find that in September, 1854, there was still a dulness at the right summit and the respiratory murmur was feeble.

Case 7 is that of a constable examined in April, 1856. Six years before he had had a hæmorrhage, and shortly afterwards recurrent hæmoptysis for ten days. During the following year

Prof. Flint met this man from time to time on the street, and he seemed to be in good health. As this man evidently had phthisis for six years prior to examination, what reason is there, in the absence of a later examination, to suppose that he had entirely recovered during one succeeding year? The statement that he seemed well will apply, at times, to many cases of chronic phthisis. "There is no further record of this case. The treatment consisted of cod liver oil for six weeks, generous living, the use of malt liquors, and out-of-door life." Very good intrinsic influences we take it.

Case 14.—A physician, who had cough, hæmoptysis and slight loss of flesh, was examined October, 1857, and found to have evidences of phthisis at the left apex. Five years later Dr. Flint saw him in apparently good health. He had been drinking beer, living generously, with an abundance of exercise out of doors. It seems that in this case and in No. 4, no medicinal agent was used, though the patients were physicians. They both had the influence of riding and driving in the open air while engaged in country practice.

In *Case 24* we find that the patient consulted Dr. Flint by letter in 1859; was relieved of part of her duties as a teacher; took more out-of-door exercise; traveled in the summer. In 1862 had abnormal dulness, feeble respiration, and increase of resonance and whisper at the right summit. Afterwards traveled in Europe; in 1868 had hæmoptysis; in 1869 increase of symptoms, and she died in the spring of 1871. Did this patient recover, and that without change of hygienic condition?

The three remaining cases do, so far as recorded, seem to be instances of recovery from phthisis without medical or hygiene agency.

Case 8 was a clerk, examined in August, 1856, having had cough two months previously and hæmorrhage a week before. There was dulness and feeble respiration at the right apex and subcrepitant râles on both sides. In October, 1856, he was reported well, and was in good health in 1871. The thought is at once suggested, why did he, being examined at a time of greatest danger, not have medicinal treatment? The case is, however, one of great interest, and is certainly an exception to the general rule, as the disease appeared, progressed and abated within a period of five months.

The other two *Cases 20 and 23*, furnish the best evidence in favor of self-limitation, though the record is very short. Two sisters whose parents, three sisters and two brothers, had died of phthisis, were found, one with disease of the left apex, the other of the right. No remedy of importance was given, or change made in the habits of life. Both were well fifteen years afterward. Again the question may be asked, why was not

some form of treatment or change of condition ordered in these cases, as "no effort had been spared to save the lives of their sister and brothers; traveling, changes of climate, together with remedies having been resorted to in vain, although perhaps, with the effect of retarding the progress of the disease." With this, however, we have nothing to do. The record is that these two sisters for whom nothing was done alone recovered. Granting that these two cases, and possibly the preceding one, show evidences of self-limitation, yet they are but three out of 670, and we again quote from Prof. Flint's paper, "Self-limitation cannot be inferred from a single case or a very few cases."

The clinical evidence cited by Prof. Flint certainly does not prove the doctrine of self-limitation according to his own definitions, for we find that in the large experience of its able advocate, among hundreds of cases as recorded by himself, that the argument is sustained by few, and in all fairness we confess a doubt as to the pertinence and value of most of these.

Is not this conclusion in accord with our own experience? What physician to-day expects that in a given number of cases of phthisis as they come to him, any small proportion will recover without the help of medication or change in hygiene or environment? Or to put the question more directly, who has so much faith in the doctrine of self-limitation that he would trust in the slightest degree in planning for the future good of his patients?

So much as we know of the true pathology of phthisis is opposed to the doctrine of self-limitation. In the constitutional predisposition of the general morbid condition which Flint speaks of as the essential disease, we now recognize only that degeneration of the body in whole or in part, which favors the reception and development of the specific factor of tuberculosis. So long as no bacilli are found, the disease cannot be proven to be tuberculosis. The tubercular cachexia is a misnomer except so far as it is limited to conditions which favor the invasion of the essential germ.

In the ordinary case of tubercular phthisis we now know that we have not only the constitutional fault, characterized, as Sir Andrew Clark has it, "by a progression of symptoms with an ulcerative or suppurative destruction of a more or less circumscribed, non-malignant deposits in the lung," but in addition, we have a specific morbid change, the result of a specific cause. I need not weary you with a discussion of the exact relation of the bacillus to tuberculosis. Whether the bacilli are the cause or the result of the rapid disintegration is not the question in point. Whether these or their ptomaines, or both are the active factors, may some day be fully decided. This much we know, that where the changes have

begun which result in those morbid products in which the tubercle bacilli are found, we have to deal with an active, relentless, progressive foe to human life.

Let us but remember that the bacillus readily enters a mucous membrane denuded of its epithelium and passes down to the lymphatics and vessel walls; that according to Netschnikoff and Naegeli it inaugurates a struggle with, and rapidly destroys feeble organic cells, and we must forever abandon all preconceived ideas of the self-limitation of phthisis.

Our author says "there should be no room to doubt as to the accuracy of the diagnosis," and the researches of the bacteriologist have placed within our reach the essential element in the diagnosis of tuberculosis, but the knowledge of the existence of this element is directly opposed to the doctrine of limitation without extrinsic aid.

Therefore, clinically and pathologically, we must have further evidence of self-limitation. I grant you that well proven cases get well. It must be admitted that treatment has in some instances been successful; that resistance has been made to the cell invasion of the bacilli and that the general systemic fault has been corrected. My position is, however, that in every such case there has been some helpful treatment administered, some beneficial hygienic or climatic change accomplished.

Our deductions must, therefore, be:

1. That there is no sufficient clinical evidence to warrant us in believing that by self-limitation as defined by Prof. Flint, pulmonary phthisis may end in recovery.
2. The pathology of phthisis is equally opposed to the proposition.
3. Although phthisis is not self-limited yet limitation is possible through "extrinsic influence derived from hygiene and therapeutics."

One word in conclusion. To no one does the medical profession of America owe more than it does to the memory of Dr. Flint. Though dead, his words live. With reverent hands would we lift the record of his work and in the same fairness which he admired and practiced, would we examine his teachings. In this city which he loved so well, and in which was once his home, no words are needed to recall his greatness.

May the analysis of the argument which we have made, and even the widely different conclusions which we have reached, be counted an honest tribute to the great influence of him whose lips are forever sealed.

MEDICAL CONGRESS IN RUSSIA.—The fourth congress of the Society of Russian Medical Practitioners will be held at Moscow, the day of meeting being fixed for January 3, 1891. The work is to be done in twelve sections.

A NEW OPERATION FOR STRICTURE OF THE RECTUM.

BY M. G. THOMPSON, M.D.,

OF HOT SPRINGS, ARK.

In no reports upon rectal surgery has the writer seen presented the principles and procedure of the following operation for stricture of the rectum, and therefore the novelty is claimed in the title to this report.

Mrs. B., æt. 32, giving history of syphilis, with a subsequent rectal stricture and fistula in ano. The symptoms of stricture, growing worse each month and not having more than one operation on bowels a week, brought the patient under examination July 28, 1890. After inducing anæsthesia examination revealed a fistulous tract from superficial sphincter opening one and one-half inches from anus, also flaps or folds of mucous tissue around the anus; within were infiltration and thickening of mucous and submucous structure, and about three inches above the anus an annular stricture almost occluding the rectum.

After dividing the fistula and superficial sphincter, a pair of uterine dressing forceps were introduced through the stricture, by means of which sufficient dilation was made to introduce a probe pointed bistoury; two incisions were then made well dividing the stricture bi-laterally. Pratt's large dilating speculum was then introduced dilating the rectum to its full capacity, being frequently turned in various directions for the purpose of thoroughly using a douche of warm carbolyzed water, and curette and silver nitrate to all suspicious pockets.

Keeping up these antiseptic precautions for about twenty minutes and the speculum remaining *in situ* paralyzing all muscular action, no difficulty was experienced in bringing down the stricture with a tenaculum and securing with an Emmett needle armed with catgut suture or loop; the mucous membrane from the stricture to the anus falling in folds and protruding from the anus like external pile tumors, an assistant then holding the stricture in position by means of the loop, the posterior folds of mucous tissue were removed with tenaculum and scissors; then making an incision half way around the anus posteriorly and removing corresponding cicatricial tissue in the stricture, the two surfaces thus denuded were securely brought together with catgut sutures. Nothing was at the time done with the protrusion of mucous folds on the anterior surface.

The usual dry dressing was then applied, and patient taking an opiate was put to bed. No suffering or inconvenience followed. The bowels moved each day and on the eighth day patient returned, when with the aid of sol. cocaine the anterior folds left protruding on the day of the operation were snipped off with tenaculum and scissors. Entire recovery on fourteenth day from

first operation. No trouble has arisen since.

Note the following suggestions, which will improve the plan of procedure:

1. Don't divide stricture before it has been brought down to the anus, and do not allow it to return after dividing.
2. Don't bring the stricture down with the tenaculum, but use hæmostatic forceps to avoid laceration and puncturing.
3. Don't paralyze with speculum; use fingers to avoid rupturing rectum at site of stricture, which accident might cause peritoneal complication.
4. If stricture can not be brought down to anus, denude and stitch to muscle.

THE CLINIC.

VAGINAL HYSTERECTOMY.

A Clinical Lecture delivered at the Woman's Hospital of Chicago.

BY FRANKLIN H. MARTIN, M.D.,

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL OF CHICAGO.

The first patient which we bring before you to-day for consideration is one upon whom I propose to perform vaginal hysterectomy, for cancer of the cervix and uterine portion of the vaginal walls. The patient is a nulapara, unmarried and but 28 years of age. As you doubtless know, such an early age and domestic condition are two factors which would not ordinarily lead us to expect cancer.

The patient was referred to my department from the out-department of the hospital, about three months ago, for the purpose of giving her the advantage of galvanism, for what seemed simple hypertrophy of the cervix from repeated attacks of endometritis. She was treated on an average of about once a week by myself or the house physician, until about two weeks ago, when, after an absence from the clinic of a couple of weeks, an examination revealed a condition which left little doubt of a rapid degeneration of the cervix, with distinct infiltration of the posterior walls of the vagina. The degeneration had been so rapid that it was with difficulty I could get a specimen for microscopical examination.¹

A decision was at once made, to operate, and as I have reason to believe from statistics recently gathered, that in the present state of surgery vaginal hysterectomy will give as low mortality in incipient cancer as high amputation of the cervix, I certainly could but give the patient the advantage of the operation which would go the farthest into the healthy tissue beyond the disease.

Preparatory Treatment.—No patient with a cancer of the uterus can afford to wait for any

¹ The microscopical examination revealed unmistakable signs of carcinoma.

imaginary good that may be gained by a long building-up treatment. As well build up a patient before relieving them of the contents of a septic pus cavity.

The patient should be prepared for the operation, effectually but promptly. We seek to get them into the hospital at least four days before the morning of the operation. The urine is examined at once. If convenient the patient should take a steam or Russian bath the first day, and keep herself well protected, with woolen next the skin. The night of the first day a mercurial, say two grains of pil. hydrarg. should be given, to be followed, in the morning, by a sedlitz powder. The bowels should be thoroughly evacuated. The second and last day before the operation the patient is given nothing but the blandest gruels and the bowels are thoroughly washed out four hours before the operation. A bichloride douche is given twice each day the four days preceding the operation, followed in each instance with pure water. No food is allowed for six hours before the anæsthetic is given. A sponge bath of bichloride is given the evening preceding the operation, and the external genitals are thoroughly purified before the operation begins. At this hospital a large dose of brandy is ordinarily given the patient before the anæsthetic, ether, is administered.

It will be noticed that the patient is thoroughly protected as she lies on the table, in body and limbs, with flannel covering. The temperature of the room is 80° F.

Those who have been selected to act as assistants, have thoroughly disinfected themselves, and the few clothes they have on are protected by these aprons and efficient sleevelets, and, therefore, all who have not been duly prepared to assist, and assigned a place, will confer a favor if they will not, under any pretext, volunteer their services.

Operation.—The patient being thoroughly anæsthetized, we will have her put in the exaggerated lithotomy position with the buttock well drawn over the edge of the table, and the limbs supported by two assistants, one on either side, in such a manner that they will each have one free hand with which to hold a Simon's retractor. It will be noticed that the vagina is very narrow, as would naturally be expected in a virgin so narrow, in fact, that it would be next to impossible to remove the uterus through it without enlargement. With this bivalve speculum, for want of something more suitable, I will, by means of the screw adjustment, forcibly dilate the vagina. This brings into relief the strong muscular bands of tension in the posterior and lateral walls of the perineum. With the scissors I will cut through the integument and the muscles beneath on either side, as is occasionally done by an obstetrician to forestall a rupture of the perineum, which seems

imminent, and at once I gain the necessary room and can successfully proceed with my operation.

As the retractors are now in place and held firmly apart, we get a fair view of the cervix and the diseased portion of the vagina. You will notice how brittle the tissue is—breaking down and bleeding with a touch of the sponge. On account of the friable condition of the cervix, which practically precludes the use of the vulselsm's forceps, I will first transfix the mass, going high, with a strong silk ligature, which will serve, when tied firmly, as a means of handling the uterus. By means of this ligature, I now draw the cervix well down to the mouth of the vagina and thoroughly cleanse it with a strong 1 in 500 bichloride solution, and after all secretions are washed away by the irrigator, which contains a like solution, of strength 1 in 10,000, I make the first incision through the vaginal mucous membrane, anteriorly, with curved scissors and keeping well away from the diseased tissue, extend the incision posteriorly either way until the cervix is half encircled by it. The cervix is now drawn forward, and the incision is extended either side and posteriorly until the uterus is completely freed from its vaginal attachment, the incision completely encircling it. I now draw the cervix well down and back again, and with blunt-pointed scissors carefully dissect the cellular connection between the anterior wall of the uterus and the bladder. In doing this, you will notice I keep the point of the scissors very close to the body of the uterus, making it almost impossible to wound the bladder. As the dissection advances, I carefully draw upon the uterus until I feel that I am approaching the duplicature of the peritoneum between the two organs. As the assistant now continues the tension upon the cervix, I examine with my finger to ascertain how near I am to the peritoneum. I find by the characteristic yielding impression given that I am about to enter it. With a little pressure with the index finger, therefore, I push through it at its point of deflection from the uterus on to the bladder, and enlarging the opening sufficiently to enter the index finger of the other hand, I forcibly separate the two fingers, laterally tearing an opening through the peritoneum which extends to the unyielding broad ligaments.

Thus we have the bladder separated from the uterus, and the peritoneum open in front around to the broad ligaments. Some operators discard the scissors entirely in separating the bladder and uterus after the vaginal mucous membrane is incised, dissecting the cellular tissue with the fingers. This requires considerable pressure and tearing oftentimes, and I believe the bladder is in greater danger of being torn by the method, than it is in danger of being wounded with the scissors, properly employed, as I have indicated.

As the assistant draws the uterus well forward

now, I will enter the posterior cul-de-sac, keeping as far from the diseased uterus as possible, at the same time looking out for the rectum. The separation is easily accomplished. I scratch into the most dependant portion of the duplicature of the peritoneum and with two fingers enlarge the opening laterally and anteriorly, until we are again stopped by the broad ligaments. We will now thoroughly wash out the vagina again, with the 1 in 1000 bichloride solution, and again thoroughly disinfecting my hands, I will sweep my index finger over the fundus of the uterus in the peritoneal cavity, to ascertain that there are no peritoneal or intestinal adhesions to the organ, which might complicate the operation. Finding none, I withdraw my finger, and insert through the posterior peritoneal opening a soft, thin, flat sponge, (a ligature having previously been attached to it) in such a position that it will keep the intestines (which always show a great inclination to prolapse) entirely out of the field of operation, and also prevent fluids from entering the peritoneal cavity.

By examination of the broad ligaments, I find them so thick and firm that I shall ligate and cut away the base before attempting to apply the clamp forceps; as I do not believe the forceps powerful enough or large enough, to accomplish a satisfactory compression of the whole ligament. As the uterus is drawn well to the right, I will transfix the left broad ligament at its base with a curved perineum needle carrying this heavy double silk ligature, so that the lower ligature will include the uterine artery in its grasp. The lower ligature is firmly tied and the upper one is carried higher and through the ligament at a point, so that the two ligatures when tied, include about a third of the broad ligament. This ligated portion of the ligament is now cut away, and with ease I can apply the large broad ligament forceps (Byford's pattern) to the remaining two-thirds of the ligament. This done, forceps firmly locked, and the tissues apparently well compressed, the remaining portion of this broad ligament is cut away, being carefully to keep at some distance from the blades of the forceps in order to leave tissue enough to prevent it, at any point, from drawing away from their grasp. As all of the tissues in the grasp of the forceps or ligatures must eventually ulcerate off, we can afford to be generous in this respect even at the risk of including a little malignant tissue.

The uterus being now free from its left broad ligament we will deliver the organ, and apply the ligatures and clamp to the right one without further difficulty. The vagina being small, and the uterus rather large, it is with some little difficulty that we accomplish the delivery of the organ. Having succeeded we will apply two ligatures to the base of the broad ligament, as on the other side, and after cutting away the ligated portion,

we easily apply the clamp to the remaining portion. Here we have an opportunity of observing how well the forceps accomplish their work.

The uterus is now severed from its last connection with the body.

The perineum is stitched up with buried catgut sutures, using great precaution to get accurate coaptation of the parts. The forceps are carefully adjusted on either side so as to obtain the minimum tension on the broad ligaments, and we will proceed to make the toilet of our operation.

At a number of points at the original vaginal incision small bleeding vessels are observed as we renew the irrigation. These I will secure with simple hæmostatic forceps. I will now bring down the peritoneal edges posteriorly, and attach, by means of lock forceps, to the edges of the posterior vaginal wall. It is desirable to get all freshly torn or cut edges of the peritoneum, as far as possible, which are liable to form adhesions with the intestines, well out of their reach. All bleeding points having now been secured, and the seat of operation well irrigated, we will withdraw the flat sponge inserted early in the operation, preparatory to our final washing. This is done with sterilized water containing no drug.

Everything being clean and comparatively dry, and the intestines well pushed up, I will bring the blades of the forceps clamped to the broad ligaments, as near together as possible, and parallel; a strip of iodoform gauze is then crowded between them to just beyond their distal ends, and the vagina loosely packed below with a continuation of the same strip. The handles of the two broad ligament forceps having been tied together after their locks have been secured, they are propped in an easy position with iodoform gauze, the vulva is sprinkled with iodoform, and the patient is returned to a warm bed.

After-treatment.—We will now go into the wards where we have a convalescing patient upon whom vaginal hysterectomy was performed Jan. 14, 1890, or about four weeks ago, for cancer of the uterus. She is now able to sit up in bed with the aid of the bed rest, and expects to leave the hospital Sunday. Her recovery has been uninterrupted, ideal, in fact, no pain, no elevation of temperature, no untoward symptoms of any kind.

The iodoform gauze which was loosely packed around the forceps was not removed for seventy-two hours. The patient was given no nourishment for forty-eight hours, and for the first twelve hours not even the smallest quantity of water was allowed. The lips were occasionally sponged with a moist sponge, and her mouth was from time to time rinsed with warm water, great care being taken to impress upon her the necessity of not swallowing even a small quantity. After the first twenty-four hours, as the stomach seemed to be perfectly quiet, a couple of drachms of water

were given every hour, and at the end of forty-eight hours barley-water was substituted. The next day a larger quantity was allowed at longer intervals, and as the stomach was in a condition to assimilate more nourishment, beef tea and thin gruels were gradually added to the diet list, until at the end of two weeks a small amount of solid food was allowed. The bowels were moved at the end of seventy-two hours by means of a saline, followed by an enema of soap and water.

I have stated that the iodoform gauze was not disturbed for forty-eight hours, and then only as much as was unavoidable in removing the forceps. These instruments were carefully removed at this time, the gauze being allowed to remain twenty-four hours longer. At this time (seventy-two hours) we can be reasonably certain that the peritoneum is closed. The gauze was removed and a vaginal douche carefully given of 1 in 5000 bichloride, with a bulbous nozzle with right-angled stream, the distal end being inserted only about two inches, the force of the stream being just sufficient to get a continuous flow, and with every precaution to maintain a free exit. All of these precautions are absolutely necessary the first few days, in order to insure that no water enter the peritoneal cavity, if the latter should for any reason be unusually slow in closing. Sterilized water should always be used to displace the bichloride solution, in order to prevent mercurial poison. Douches of this character were given twice daily after the first three days until all signs of necrosis had disappeared, and then once a day until the present time. Two ligatures attached to the base of the broad ligaments were discharged with the douche fourteen days after the operation.

Summary.—The operation that you have witnessed this morning was first performed in this country in 1850. The mortality at first was so high, on account of the crude methods employed, and a lack of proper understanding of the true principles of surgery, that it was with difficulty that surgeons could be induced to undertake the operation. Even now many surgeons prefer to temporize with scraping, amputation, and, if the patient holds out, high amputation, rather than give the patient at once the benefits of an operation which will give the greatest possible chance of an ultimate cure.

The only alternative between this operation and sure death, for a patient suffering with even incipient cancer of the uterus, is high amputation of the cervix. High amputation of the cervix, according to the latest reliable statistics, in the hands of its most experienced advocates, gives an immediate mortality of more than 6 per cent. In the hands of equally experienced operators, I believe that the operation of vaginal hysterectomy, in the same class of cases in which high amputation would seem to offer a probable

means of cure, will give us a mortality fully as low as statistics give us for high amputation. In this hospital, for instance, with all kinds of cases, some of them almost desperate, we have had no deaths, and the operation has been performed twenty times by three operators, as follows: Dr. Henry T. Byford, 14, Dr. D. T. Nelson, 2, myself, 4.

If the operation can be rendered as safe as high amputation, it does not seem necessary to further argue the question, to convince any one that the more radical one should always be selected for cancer.

It seems to me that vaginal hysterectomy is to be the means of the future of saving many women from one of the most horrible deaths of which it is possible for mortal to conceive. Seek, in your practice, to make early diagnoses of this dread disease, and then be prompt to give your patients the benefit of the most radical and rapid means of relief that we know.

NOTE.—The patients mentioned in this paper both made ideal recoveries, and are (August 6, 1890) in perfect health.

MEDICAL PROGRESS.

RECENT INVESTIGATIONS UPON THE THYROID GLAND.—Since the crucial experiments of Horsely and others regarding the connection between the nervous system and that gland, numerous investigators have applied themselves to the study of the functions of this organ. Recently these articles have been abstracted in *Schmidt's Jahrbücher*. The first from the pen of PROF. RIBBERT (*Virchow's Arch.*, cxvii) deals with the regeneration of this gland after extirpation. The experiments were conducted upon dogs and rabbits and consisted in removing small portions from one half of the thyroid body and at different times after the operation removing that portion of the gland. The careful microscopical examination of these showed that in this, like other glands, there was a functional regeneration. New portions of the gland developed by infiltration from cells in the old alveoli, that were at first small without lumen, but later enlarged, developing a cavity filled with colloid material. Small defects were filled with newly developed gland tissue; larger ones presented upon their edges, new tissue, while the central portions were filled with connective tissue.

DR. HERMAN STIERDA (*Beiträge zur pathol.—Anat. und allg. pathol.*, vii, 1890) has confirmed the observations upon rabbits, made by Nauwerck in 1888. That these animals bear extirpation of the thyroid when cats and dogs are destroyed by the operation. The relation in weight of the petuitary body in rabbits he found to be 1:3.3,

while in dogs, the thyroid is 15:20 times the weight of the petuitary body. Stieda found that there was an increase in weight and volume of the petuitary body after extirpation of the thyroid gland. The enlargement consisted of vacuolation and an increase in the large cells. Stieda is of the opinion that this enlargement corresponds with an increase in function, that in part takes the place of the extirpated thyroid.

RICH and EWALD (*Arch. f. d. ges. Physiol.*) have found that the removal of the thyroid causes no perceptible alteration in the health of pigeons. Their work was undertaken with reference to the earlier observations of Langendorff and Ewald, in which they referred the difference in the loss of the thyroid observed in dogs and rabbits, to the difference in diet. They, therefore, chose pigeons as representing a pure vegetable feeder, and found that the loss of this gland did not in any way affect the health of the animal.

It would have been of great interest in the light of Stied's communication if these later authors had observed the condition of the hypophysis in the operated birds, and the relation of this organ to the size of the thyroid in birds generally. While so much has been added to our knowledge of the thyroid in the last few years, a careful study of recent literature only shows how much, regarding its functional relations, still remains to be explored.

AN UNDESCRIBED TROPHIC AFFECTION OF THE THIRD PHALANGES.—ROSENBACH (*Central-Blatt für Nerven Heilkunde*, August, 1890) claims to have discovered a hitherto undescribed trophic disturbance in the third phalanges. The disease consists essentially of an enlargement of the tubercle at the base of the phalanx, preceded and accompanied by pain in the part. The disease is almost exclusively found in women, from 30 to 50 years of age, and is especially frequent in those approaching the climacteric. The author has seen one or two cases of the trouble in men, but it is relatively very infrequent as compared with the number of women attacked. The disease is usually symmetrical, attacking both hands in the same way, and confines itself strictly to the dorsal side of the third phalanx, the thumb always remaining free. It is preceded and accompanied by changes in sensibility, formications, heat flashes, numbness, etc., in the region of the ulnar and radial nerves.

The author attributes the affection to trophic disturbances in the nervous supply of the periosteum, similar to the special changes in the nerves of the skin, found in herpes.

The differential diagnosis lies between arthritis deformans and gout. The first is distinguished by a very different localization in the large joints and in the thumb, the irregularity of the swell-

ing, and the involvement of the joint surfaces which remain free in the trophic disturbance under consideration. Gout is less easily differentiated, but here we have the general diathesis and above all the slow increase in the enlargements, without redness or swelling of the parts, and the peculiar local nervous symptoms are wanting.

LISTER ON THE ACTUAL STATE OF ANTISEPTIC SURGERY.—(Tenth International Medical Congress.) Since Koch made known his method of the culture of microbes on solid media, there has been considerable extension of our knowledge of microorganisms, and of the means by which the animal organism defends itself against them. Metchnikoff has demonstrated that the migratory cells nourish themselves like amoebæ and have a special taste for bacteria which they absorb and digest, thus preventing their indefinite propagation. He calls these migratory cells "phagocytes." This theory explains much that seems mysterious in regard to the relation of microorganisms with wounds. For example, in the operation for hare-lip, the posterior termination of the wound is constantly bathed in saliva which contains numerous kinds of septic bacteria. Yet these bacteria do not penetrate the fibrin which glues together the two cut surfaces, which they certainly would do if the surfaces were composed of a chemically inert surface devoid of life. This is due to the "phagocytic" action of the cells which are present in the lymph soon after its effusion.

This theory also explains why the use of silk ligatures which have not been subjected to antiseptic preparation may not be followed by unpleasant consequences. Zeigler has shown that leucocytes penetrate rapidly into the very small spaces between plates of glass or other foreign bodies which are chemically inert and have been introduced into the tissues. These leucocytes ought therefore to be also able to glide into the intervals among the fibers of the silk thread, and to destroy all the microbes which are able to lodge there.

The success attained by Bantock and Lawson Tait without the use of antiseptics appear a stumbling block. But in reality the practice of these surgeons is not devoid of antiseptic means. They purify their sponges; they observe strict cleanliness; this is certainly an antiseptic precaution. They wash the peritoneum with pure water in order to free it from coagula without wounding the peritoneal surface by rubbing it with sponges.

The drainage of the peritoneum is another antiseptic measure; moreover, it is necessary to avoid the application of strong and irritating antiseptic solutions to the peritoneum. But it would be wiser to assure, by means of antiseptics, the entire absence of microbes from the hands

and instruments; as to the water used for the toilet of the peritoneum, it is better to have recourse to a feeble sublimate solution (1 to 10,000 for example) than to simple boiled water.

In the surgery of the rest of the body, the employment of stronger antiseptic solutions does not present the same inconveniences.

As to the spray, Lister regrets that he formerly recommended it to destroy the microbes of the air. There is not sufficient time for the microbes to lose their vitality in the vapor of the spray.

Since he has abandoned the spray, Lister surrounds the site of the operation with cloths soaked with antiseptic solutions. If, besides the spray, washes and irrigations are abandoned, vigilance ought to be redoubled.

Reasoning, by analogy, from subcutaneous wounds, Lister says that a wound made under antiseptic precautions could be immediately sealed by covering the line of union by an antiseptic varnish. But he claims that carbolic acid by irritation excites a secretion of serum so abundant that its issue necessitates an opening. Hence the drainage of wounds.

After the recent method of treating wounds with sublimate, the secretion is less and drainage less necessary.

As to external dressings, some surgeons have thought to unite simplicity and security by using cotton wadding sterilized by heat. But this wadding, being simply aseptic, only prevents infection as long as it is dry; once wet through to its external surface by secretions, it may become a septic mass, and there are always wounds where the secretion will remain abundant.

In some cases, a perfectly antiseptic dressing may be a matter of life and death. For in these cases with abundant secretions, only antiseptic chemicals can prevent the development of septic organisms. With this end in view, Lister employs a combination of the cyanides of zinc and mercury, which is a sufficiently strong antiseptic, and is moreover non-irritating.—Translated by Dr. F. Neuhoff, St. Louis, *La France Méd.*—*Weekly Medical Review*.

LATERAL PROSTATECTOMY.—DITTEL (*Wiener Klin. Wochenschr.*) refers the retention in hypertrophy of the prostate largely to the lateral lobes, and thinks that any operation must reach these lobes in order to overcome their valvular action in causing retention. This was shown by experiments upon cadavers. When a body with normal urethra and bladder was suspended, water injected into the bladder, promptly passed out by the urethra; such, however, was not the case where the prostate was enlarged bilaterally. In these latter cases, when a resection was made of the lateral lobe, the fluid passed rapidly away. The excision of a wedge-shaped piece from the middle lobe was without result.

Dittel has not as yet tried his method upon a living patient but gives full directions regarding the best methods of operating, from his dissection of cadavers. The incision should begin at the point of the ischium and extend to the middle of the external sphincter, circling the latter as far as the raphé. This cut opens the ischio-rectal fossa from which the dissection is rapidly made exposing the lateral lobe of the prostate. The rectum should be previously tamponed, to prevent wounding and aid in separating that structure from the enlarged prostate.

The author recommends an early operation in these cases, while the urine is yet normal and the patient comparatively free from pain.

ALCOHOL AND CHILDHOOD.—PROF. DEMME, of Berne, at the recent International Alcohol Congress at Christiania, presented an interesting report of an investigation which he had made as to the influence of alcohol upon children. Having unusual opportunities for this study from his position as superintendent of a hospital for children, he selected two groups of ten families each, under similar external environment. One group of 57 was manifestly affected more or less by alcohol; the other of 61 was unaffected, or at least very little affected. Of the 57 who exhibited the effects of alcoholism, 20 had inebriate fathers, the mothers and grandparents being moderate drinkers. Only 45 per cent. of these (9) had healthy constitutions. Thirty-one had inebriate fathers and grandfathers, but temperate mothers and grandmothers. Only 2 of these, or a little over 6 per cent., were healthy. Six children had parents and grandparents intemperate; 1 of these survives, a sufferer from epileptic seizures. In remarkable contrast is the state of the 61 children belonging to temperate families, 82 per cent. of whom enjoy good health, 3 have died, and 8 are in bad health. Prof. Demme also reported the results of an experiment on several children, from whom all intoxicants were kept during eight months, and to whom the usual allowance of wine and water was given during the remaining four months of the year. These children were reported to have slept more soundly and longer, and to have appeared in better spirits and more active, during the non-alcoholic eight months than during the alcoholic four months.—*British Medical Journal*.

NEURASTHENIA AND NASAL DISEASE.—The causes of neurasthenia, obscure as they are, are not to be sought in some slightly abnormal condition of an organ such as the nose; and to imagine that local treatment of this, or indeed of any individual organ, is going to reward us with successful therapeutic results, is to subject ourselves to such failures as Dr. More Madden very honestly has recorded. Many women live only for the

gynecologist, and though we would not for a moment impute such conduct to members of a noble profession, there is no doubt that gynecology, in some unscrupulous hands, has not been free from chicanery in a class of patients in whom the loss of nervous control, which is the essence of neurasthenia, has rendered them ready agents to such practices. It would be a thousand pities where rhinology to incur the same reproach. To remove a vital cause of irritation is right and proper, but to assert that the slight pathological abnormalities met with in many nasal organs, even when they are accompanied with nasal catarrhs, is in a real proportion of neurasthenic individuals a potent cause of their troubles is, we think, to take up an untenable position. Those who, in such cases, look only to intra-nasal surgical treatment, and fail to appreciate the necessity of getting behind these apparent symptoms, and treating the general nervous system as of primary importance, will be doomed in their specialistic narrowness to failure. To say that such treatment, even if it does no good, will do no harm, is not correct. Very great aggravation of the patient's sufferings may follow injudicious and meddlesome interference. It is in neurasthenic patients, of all others, that we should exercise the very greatest discrimination in recommending or carrying out surgical treatment.—*Journal of Laryngology and Rhinology.*

HYSTERICAL FACIAL PARALYSIS.—The statement of Charcot that paralysis of the facial nerve, is never of hysterical origin, has recently been negated by HUET (*Nederl. Tijds. v. Geneeskde.*—*Cent.-Bl. f. Nervenheilkde.*) who reports a typical case of central paralysis of the facial nerve in a girl twenty-one years of age. The trouble came on immediately after a severe fright, and was followed by pronounced symptoms of hysteria, globus painful points, vomiting, hemi-anæsthesia, etc. Later hystero-epileptic attacks developed, and she presented a complete picture of hysteria gravis. Van Deventer also mentions a case in which facial paralysis came on in April and was still noticeable the following October. A later observation showed that the paralysis had entirely disappeared. This patient also presented the typical features of hysteria gravis.

CREMATION.—THOUVEUT, before the Section on Hygiene, of the French Association for the Advancement of Science (*La Semaine Médicale*), maintained that the present outbreak of cholera in Spain was due to the exhuming of the bodies of the victims of the epidemic of 1885. He regards cemeteries as vast depots of infection for the pollution of the air and water with pathogenic germs, and the sole remedy for this condition lies in cremation. In conclusion he proposed the construction of crematories in cities and villages, and the mak-

ing of cremation compulsory in cases of death from infectious diseases. He invited the Section to approve his conclusions, but they decided that for the present it was unwise to make any change in the law, as it probably could not be enforced. They strongly *advised* cremation in infectious diseases.

SEXUAL PERVERSION.—MOTET reported to Société de Médecine Legale (*Progrès Méd.*) the case of a young man who was arrested for attempting to cut off the hair of a young woman. In his rooms was found a quantity of hair. This individual had a marked neurotic heredity from both the father and mother. He was an intelligent and skilful mechanic. In 1886, after an attack of herpes intercostalis, he began to act queer and conceive the imperative conception to cut off women's hair. As soon as the shears touched the hair he had an erection, and the cutting was followed by an ejaculation. He was declared insane and irresponsible, and was sent to an asylum, where after a time he recovered from his peculiar propensity, and later resumed his profession.

OPIMUM AND COCAINE IN INCOERCIBLE VOMITING.—At the French Association for the Advancement of Science Congress of 1890, in the Medical Section, M. TYSON, of Paris, read a paper on the association of opium and cocaine in the treatment of rebellious vomitings of pulmonary tuberculosis, divers gastritis, etc. In a large number of cases the author claims that the best results followed the exhibition of pills, each containing one centigram of hydrochlorate of cocaine and an equal quantity of extract of opium. Of these from 5 to 6 were given daily, preferably ten minutes prior to the introduction of food or drink into the stomach. The same treatment has been found excellent in allaying the pain, nausea, and vomiting of alcoholic gastritis, cancer of the stomach, dilatation of the stomach, etc. As the pills are very deliquescent, it will be necessary to add the usual corrigens in such cases.—*National Druggist.*

HERNIA.—PROF. KUESTER (*Centralblatt der Chir.*, No. 36) mentions, in connection with radical operations of old and large inguinal hernia, a new danger hitherto overlooked, or at least not referred to. In all these cases the abdominal cavity is so much reduced in size as to admit, but with some difficulty, the protruded intestine. On one of such occasions the patient commenced to vomit and then became asphyxiated. Tracheotomy, promptly performed, relieved the air passages at least in part, of some food which the emesis had forced into it. But the patient, nevertheless, died on the table. Kuester thinks that the stomach should previously have been washed out, and the mechanical expression of its contents obviated.—*St. Louis Clinique.*

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SOME MEDICAL PROBLEMS CONCERNING
IMMIGRATION.

It is evident that many important medical questions of the future will depend on the present movement of populations. This is apparent in two ways: First, the increasing movement of the rural population to large towns and cities, and second, the great tide of emigrants that comes flowing in on our shores yearly. In the former the increase in a century has been from one to twenty-five to one in three. This increase has been general all over the older parts of the country. Agriculture is less attractive, although carried on with less muscular labor every year, owing to the rapid improvement in labor saving machinery. A large class of robust, healthy men are constantly filling up the towns and cities, living in less healthy surroundings, and in conditions more unfavorable to health and longevity. They suffer from diseases that are largely influenced by these changed conditions of living; and their children bear unmistakable marks of race degeneration, springing from the hygienic neglect of the parents. As a rule the families of the more prosperous of the city residents, who are born and bred in the city, are "switched on the road to extinction." They are the largest patrons of physicians and suffer from the most complex disorders, while their country cousins of the same race stock are well and vigorous. The vigor and brain force of city populations are only kept up by constant immigration from the country.

This movement of the population is at the expense of its longevity, and is attended with premature exhaustion and decline. The class of diseases that appear in city families of the same social status are rarely seen by the country physician. The acuteness needed to differentiate these obscure diseases, where constitutional degeneration and exhaustion are present, is not called for in the country, because the symptoms are clear and prominent and less complex. The wise city physician early recognizes this decline of vigor and urges a retrograde movement to the country.

It is evident that somewhere in the near future the towns and cities of the country will become crowded beyond their capacity, to support the population rationally, and a receding wave of immigration will set in towards the country. Some great law (not clear at present) will eventually regulate this ebb and flow of population from country to city and back again. In the second great movement of races, viz., the immigration from other countries, the problem is wider and the questions more complex. Once this movement was welcomed, and the vigor and prosperity of the country seemed to depend on it. To-day grave perils appear to gather about this army that is steadily landing on our shores.

For the year past, ending July 1, 1890, half a million persons came to this country to stay. Compared with former years these immigrants are steadily and distinctly deteriorating. While the numbers are increasing the physical and mental status is lower. Large numbers are not only incompetent to become self-supporting, but are diseased in both body and mind. They early become burdens on the community, filling up hospitals, almshouses and insane asylums, and are centres of degeneration, antagonizing every state of healthy life and living. Strenuous efforts are made to shut out convicts, paupers and idiots, with partial success; but mental paupers and anarchists, and defectives of every degree rush into our civilization, and are permanent obstacles to every advance.

The medical problems which grow out of this disorganizing element are more serious every year. Physically the unsanitary conditions which they foster, and the nidus of various diseases which gather about them, are always perils to the community. Mentally they join the armies of the

"squatters" and "camp followers" who prey on civilization, and the evolutionary march of the race. While large numbers of these immigrants are swallowed up in the vast farming regions of the far West, and lay the foundation for populous States and cities, it is the duty of the medical man to insist on boards of health, and strict sanitary regulations, and laws which will require the proper observance of all measures that build up public health.

This incessant movement of strange people in crowded cities and lonely country towns, can be more largely influenced by the physician. If he is a scientific man, alive to the vast formative influences that are about him, and demands sanitation, with education, that shall practically apply to all the surroundings, he is doing the highest work possible in the profession. As a reformer in breaking up the wretched tenement houses, and other nuisances, that these poor immigrants build up, and saving life by demanding better conditions of living, he is approaching very near the great ideal physician. The civilization of America will be very largely controlled by physicians, working along lines of sanitary science, pointing out the laws of heredity, of environment, of climate, education, and other forces which fashion and mould the race. How far these armies of immigrants from country to city and back again, and from all climes of the globe, will be assimilated and at last settle into one great race of homogeneous people, will depend very much on the present teachings and interpretations of the laws of nature by the physician of the city, in the lecture-room or by the bedside, and the country physician in his visits to the lonely farm houses.

POISONS PRODUCED BY BACTERIA.

A few weeks ago we referred editorially to some experimental work of ROUSSY upon the pathology of fever, in which he demonstrated what appears to be a fever producing albuminoid, which he termed "pyretogenin;" we have now to mention the labors of BRIEGER and FRÄNKEL (*Berl. Klin. Wochenschr.—Centralblatt für Physiologie*) upon the toxic substance produced by the diphtheria bacillus of Löffler.

Pure cultures of the bacillus were prepared in large quantity in pepton-broth with or without

the addition of glycerine. ROUX and YERSIN had previously separated the toxic substance from bouillon cultures and believed that it belonged to the class of enzymes, a conclusion which the writers cannot indorse. They succeeded in obtaining the substance dry and class it among the albuminoid bodies, the "toxalbumen" as they name them.

The cultures were at first passed through a Chambelain clay filter. The germ free, lemon yellow, clear filtrate proved to be very poisonous to animals and produced symptoms similar to those caused by inoculation with the bacillus including the peculiar paralytic phenomena of diphtheria. When heated to 60° C. it lost most of its toxic properties. It resisted acidifying with sulphuric acid, and steaming to 50° C. An examination for ptomaines and volatile bases gave a negative result. It also failed to diffuse through membranes into water or a solution of sodic chloride. It was precipitated by ammoniac sulphate and sodic phosphate as well as absolute alcohol, the latter method being the one usually employed. After dialysis and drying *in vacuo* the substance was obtained as a snow-white, amorphous, granular powder, easily soluble in water, from which it was not thrown down by boiling, sodic sulphate, sodic chloride, magnesian sulphate, plumbic acetate or by dilute sulphuric acid even when heated. It is precipitated by carbonic acid or other reagents that throw down albuminous bodies. With Million's reagent a red color was produced, as well as the biuret and xanthoprotein reactions. The plane of polarized light was rotated to the left. From these various reactions the writers conclude that this substance is closely related to serum albumen, though the ultimate organic analysis showed a composition closely allied to pepton, with the following percentages: C. 45.35, H. 7.13, N. 16.33, S. 1.39, O. 29.80.

This body in a pure state was very poisonous, 2½ milligrams for each kilogram of body weight of the animal experimented with, proving fatal, though sometimes only after weeks or months. (This confirms earlier observations by Roux and Yersin.) Very small quantities injected subcutaneously caused abscess and necrosis, and later wasting of the body.

The authors believe that this "toxalbumen" is produced from the albumen of the infected part in the ordinary diphtheritic process, and in this

connection recall the "Ichthyotoximum" which A. and N. Mosso obtained from the serum of the murex, and the poisonous albuminoids obtained from plants by ROBERT and STILLMARK.

Further experiments were frequently hindered by the fact that cultures lost their virulence, and stopped producing the poisonous substances. In cultures that had lost their virulence an albuminoid body was found that could be distinguished from the other by its dark brown color and non-toxic properties.

It will be seen from the foregoing that great progress has been made in isolating the peculiar toxic substances produced by microorganisms. It appears now as though it would soon be necessary to admit, as suggested by Vaughan, before the pathogenic character of microorganism can be said to have been established, that its peculiar toxic product shall have been isolated and studied.

MALPRACTICE SUIT DECIDED.

The suit brought by Mr. Sims against Dr. A. H. Parker, of Chicago, the well-known expert truss adjuster, for \$15,000 damages, was tried before Judge Baker recently, and after the evidence on both sides had been closed and the counsel for the prosecution had presented his side of the case to the jury, the Judge instructed the jury to return a verdict for the defendant. The evidence showed that Sims had worn a truss several years on account of an inguinal hernia before he applied to Dr. Parker, and for several months he had suffered at times with pain on the same side as the hernia. After the truss fitted by Dr. Parker this pain continued to recur, and sometime after he had passed from the observation of the latter, a psoas abscess matured and pointed somewhere about the groin or upper part of the thigh, and not being efficiently treated by thorough drainage and antisepsis by his attending physician, the plaintiff suffered a protracted and painful sickness, but from which he ultimately recovered. His suit against Dr. Parker was founded entirely on the allegation that the truss fitted by the latter had caused the abscess. The evidence on the part of the defense showed that the defendant was an experienced specialist in the fitting of trusses of good reputation; that the truss used was of good quality and proper form, and that the pressure of the pad would have no tendency

to induce the formation of an abscess. There appearing thus no evidence to incriminate the defendant the Judge very properly decided that there was no evidence for the jury to consider, and therefore required a prompt verdict for the defendant.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The sixteenth annual meeting of this Association convened at Louisville, Ky., on October 8, 9 and 10. A brief *résumé* of its proceedings will be found in the present number of THE JOURNAL. While in full affiliation and sympathy with the American Medical Association, and in no wise sectional in its preferences or purposes, it nevertheless represents a large and growing constituency, and is numbering in its ranks some of the most promising medical men in this country.

The present meeting was a notable success. DR. J. P. MATTHEWS, its widely-known and popular President, came from a sick-bed to the fulfillment of his official duties, which he performed with heroism, wisely and well. The Secretary and Executive Committee have rendered valuable assistance, and the general arrangements were complete.

A very full and valuable programme had been prepared, and three days did not suffice for its presentation. The papers and the discussions will rank with those of any of our medical organizations, local or National.

We are the more profoundly impressed with the ability as well as of the number of medical men in America who can ably represent the profession when we note the character and the work of the men of the Mississippi Valley as they were convened at Louisville. The writer or the speaker who is impressed with the idea that in any one locality the ability or aristocracy of the profession is centred, is both a man untraveled and unread. The need of the times is that the strength of a score of individual organizations shall be so unified and harmonized that a National representation of our profession shall by such union be secured, and such a National Association as may be possible in no other land.

With reference to the entertainment of visitors it is enough to say that the meeting was in Louisville, and that the profession were able to bring to their help the beauty, brilliancy, the wit and

talent of its fair ladies, and as in times past, so again the receptions were magnificent.

So long as the Association shall hold to its purpose of strictly scientific work and permits no social attractions to trench upon its working hours, so long it will be in every way helpful to its members.

The popular address by DR. JOHN A. WYETH was a model of its kind, and that portion which compassed the subject of clinical instruction is worthy of permanent record.

The onward progress of medicine in this country will be more and more assured by the multiplication of such meetings as the recent one at Louisville.

EDITORIAL NOTES.

POSTPONEMENT.—The Committee of Arrangements have postponed the next meeting of the Tri-State Medical Association until November 19 and 20.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its annual meeting at Atlanta, Ga., on November 11, 12 and 13. Members of the medical profession are invited to attend. The Secretary is Dr. W. E. B. Davis, Birmingham, Ala.

A DESERVED COMPLIMENT.—Dr. Benjamin Ward Richardson, F.R.S., of London, Eng., has dedicated the sixth volume of his original work "The Asclepiad," to Dr. Joseph Jones, of New Orleans, La., in the following words:

To Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, in the Tulane University of Louisiana:

A model student of medicine, always seeking, always finding, always imparting, with unwearied industry, new and useful knowledge to the great Republic of Medicine, Science and Art, this the sixth volume of the "Asclepiad" is sincerely dedicated.

Dr. Richardson is the most eminent living British writer and authority in experimental therapeutics and practical hygiene. He has devoted his life to the elevation of the medical profession by his extensive original researches, and to the alleviation of the ills of humanity by his works on insanity and hygiene.

MEDICAL DEPARTMENT OF THE NEWBERRY LIBRARY, CHICAGO.—Excellent progress is being made in the development of a full medical library for the free use of the profession, by the

Newberry Trustees. The present library building is at the corner of N. State and Oak streets. The cases for the medical department are completed and several thousand volumes are on the shelves. On the 2nd inst. two hundred and eighty-five medical periodicals were ordered, namely: from the United States, 95; Africa, 1; Australia, 2; Austria, 15; Belgium, 7; Canada, 5; China, 1; Denmark, 3; East India, 1; France, 47; Great Britain, 20; Germany, 59; Italy, 13; Japan, 1; Mexico, 1; New Zealand, 1; Norway, 3; Spain, 4; Sweden, 3; Switzerland, 2. Arrangements have been made for the regular and prompt reception of all the periodicals subscribed for, and before the end of the present month members of the profession will have access to the medical periodical literature of the world. It is hoped that those who have been freely indulging in expressions of impatience, will show their interest by frequent visits to the library. For nothing else will so much encourage the Trustees to make the library grow, as the frequent use of what they have already provided.

ARTIFICIAL MUSK.—A German chemist named Bauer, has discovered and patented a process for making a laboratory musk. The new product is not identical in chemical composition, with the natural article, but it is possessed of the characteristic odor. The process of its formation is said to be by means of the nitration of isobutyltolene with a mixture of strongest nitric and fuming sulphuric acids. The manufacture of this substance has been begun on a considerable scale. It is said not to be poisonous.

OPERATIONS UPON THE HYPERTROPHIED PROSTATE.—In a paper presented to the Mississippi Valley Medical Association at Louisville, Dr. Wm. T. Belfield, of Chicago, collects 133 cases of operations upon the hypertrophied prostate, including eight of his own, as follows: 41 by perineal incision, mortality 9 per cent.; 88 by supra-pubic cystotomy, mortality 16 per cent.; 4 by combined perineal and supra-pubic incision, none fatal. In 56 of these cases the essential facts before and after operation are furnished; they had been the subjects of cystitis and dependent upon the catheter for periods varying from one to ten years. In all the cystitis was cured; in 38 (two-thirds) voluntary urination was restored and continued during the time of obser-

vation, six months to two and one-half years; in eighteen this function was not recovered. Fifteen of these 56 cases were complicated with stone; excluding these—since it might be objected that the cure resulted rather from the calculus extraction than from the prostatic operation—there remained 41 cases of uncomplicated prostate operations; of these 32 (four-fifths) recovered the power of urination, in 9 this ability was not recovered.

FATAL POISONING AT BELLEVUE HOSPITAL.—It is reported that a patient in Bellevue Hospital, New York, having typhoid fever, recently lost his life in consequence of an error on the part of a nurse. The house physician had prescribed for the patient a drachm of a mixture containing one part of carbolic acid to sixteen parts of glycerine, but pure carbolic acid was administered instead. The verdict of the coroner's jury censured the nurse for his carelessness. The jury also found that this negligence of the nurse "was in part attributable to the authorities of the hospital, who neglected to label properly the medicine prescribed by the regular physician, and who allowed made-up prescriptions, for internal use, to be mingled in the same chest with poisons of a violent nature, intended for external use only, and the whole to be placed in the control and custody of inexperienced nurse-pupils, and in this case, of one below the average intelligence."

CHLORIDE OF AMMONIUM IN ALCOHOLISM.—This drug is said to promptly and completely overcome the narcotic effect of alcohol. It is possible to restore to the use of his faculties one who has been rendered helpless by intoxicating drink, by administering $\frac{1}{2}$ drachm of the ammonium chloride in glassful of water.

A CHOLERA CONGRESS AT ROME.—An International Sanitary Congress has been invited to convene at Rome for the purpose of taking steps to guard against the spread of cholera.

THE FIFTEENTH SEMI-ANNUAL MEETING OF THE DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS will be held at Decatur on Tuesday, October 28, 1890. Programmes may be obtained on application to the Secretary, Dr. J. H. Miller, Oconee, Ill.

THE MICROBE OF GRANULAR OPHTHALMIA.—*The Lancet*, August 23, quotes the researches of Dr. Shongolowicz, of St. Petersburg, regarding

the microbe of granular ophthalmia, from which it would appear that it is not a micrococcus, as has been described by several observers, but a short bacillus. The length of this rod is from .002 to .00075 millimetre and its breadth from .0003 to .00005. Its preparation and staining are not easily managed, but gentian violet proved to be the best stain. The different segments of the bacillus take very different degrees of stain, and this it is that has given rise to the idea that the organism is a micrococcus arranged in lines or chains. A considerable number of experiments were made by Dr. Shongolowicz on the eyes of animals, but in only two cases did he succeed in producing an affection that closely resembled the granular ophthalmia in the human subject.

THE SALE OF OPIATES.—*The Pharmaceutical Era* says: A paper upon this topic presented the subject in the very plainest of words and forcible language to the members of the State Association assembled at Saginaw. The writer severely took to task that very numerous class of druggists who were found perfectly willing to cater to the trades of those infortunates who have become addicted to the habit of opiate taking. He related how certain ones in order to keep this trade had no hesitancy in reducing the price of morphine, opium, chloral, etc., so as to attract these customers to their stores. Druggists of this class were denounced in no measured terms. The writer took the ground that even though this people must have these enslaving drugs, yet the pharmacist should do all in his power to discourage the habit, and more than that, by putting restrictive prices on the goods show he has no desire to cater to this class of trade.

If opium were reduced one-half in value, the druggist should not therefore give twice as much morphine or laudanum for the same money as heretofore. The remarks of the speaker were highly approved of, his hearers agreeing that this evil had grown to great proportions, until its regulation and proper conduct is a matter that should enlist the serious attention of the public and its law-makers.

It is proposed to amalgamate all the medical societies in Russia into one general association, which will be divided, for scientific purposes, into sections of medicine, surgery, obstetrics, etc., but will be managed by a central committee.

TOPICS OF THE WEEK.

MEDICAL ARCHÆOLOGY.

The Greek correspondent of the *Athenæum* (Syr. P. Lambros), in a letter to that journal, has given an account of the task undertaken by Dr. G. Kostomiris, who, in 1887, published an interesting treatise on ophthalmology and otology among the ancient Greeks. Dr. Kostomiris has since pursued his researches at the Bibliothèque Nationale in Paris, and discovered there a large number of unpublished manuscripts of medical works. In a paper read before the Academy of Medicine he enumerated the works of twenty-four physicians, and also several anonymous treatises, which he considers deserve publication, not only on account of their historical and philological importance, but also on account of their medical value. This last statement may be due to the learned ophthalmologist's enthusiasm, but the interest of the subject is so considerable that it is pleasant to learn that the Medical Faculty of Athens and the Senate of the University have taken up the project to print the pseudo-Hippocratean treatises which have not yet been published, as well as treatises of Kratenas, Galen and Promotus. Funds have been provided from public sources and Dr. Kostomiris is about to devote a year to preliminary work. His first step has been to proceed to Mount Athos to study the manuscripts preserved there. *Brit. Med. Jour.*

DECREASE OF THE INDIAN TRIBES.

That the race of red men in North America is rapidly dying out, and that the policy of the Federal Government, in assigning to them reservations of territory for their exclusive use, has been powerless to arrest this decay, are facts familiar to all. We are, perhaps, too much inclined to regard this decadence as a mysterious and inexplicable blight—as due, not to normal causes, but to the mere contact of an inferior with a superior race. This sentimental view involves at least two obvious errors: first, the assumption that all colored races tend to die out before the advance of the victorious white man; and, secondly, that the causes of the decay of the red man are inexplicable, whereas they are only too obvious. As regards the former point, it must be remembered that some colored races—the negro, for example, and the Malay—hold their own when brought into contact with the whites. The negroes in North America have increased more rapidly in numbers during the present century than their white neighbors, and the certainty that this superior fecundity of the negro will continue constitutes one of the gravest problems that confront American statesmen. The Malay and the Chinaman, not to mention other examples, are quite capable, if allowed fair play, of prospering and multiplying amidst a white population. Hence, the doctrine, so often assumed as self-evident, that the colored races die out as it were by a natural law when brought into contact with the whites, is entirely fallacious. This doctrine has probably obtained currency owing to the fact that in certain familiar cases

it seems to find an obvious illustration. The last native has disappeared from the island of Tasmania. The native Australian is to-day but rarely seen in Victoria, South Australia or New South Wales, and is becoming rarer even in Queensland and Western Australia. The Maori of New Zealand and the Sandwich Islander are both going steadily to the wall before the Anglo-Saxon. These instances, which are sufficiently impressive, strike the imagination, and readily create the idea that the colored man has no chance in the struggle for existence with the white. We have seen, however, that there are several notable exceptions to this apparent law, and we are therefore driven to seek elsewhere than in a fallacious generalization for an explanation of the decadence of the Red Indian of America.

The explanation is evidently to be sought in the changed habits and mode of life which contact with civilization has involved to the red man. In former days he lived an out-of-door life, he was constantly on horseback, he pursued the customs of a nomad, he dressed in skins, and lived chiefly on flesh meat. Now he lives for the most part in close cabins, he dresses in shoddy blankets and calico, and he drinks tea, coffee and rum. Hence he falls a ready victim to scrofula and phthisis. How far the loss of the free nomad life and of the wild joy of battle may have still further depressed the mental condition of the Red Indian may be a question. He comes of a race for whom war has been for generations the only honorable employment, and he seems unable to reconcile himself to a life of toil and industry.

The moral of these facts for us is not that we should all turn nomads in order to avoid phthisis and scrofula, but that civilization is a more or less unnatural process to which a wild race cannot be suddenly subjected without great peril, and that even for long-civilized peoples the civilizing influences have certain dangers which are closely associated with unhealthy dwellings and unwholesome food. The great law of adaptation to our environment, obedience to which is the necessary condition of survival, finds in these matters one of its most striking illustrations. If the red men had been a numerous and powerful people, and if the civilizing process could have been very gradually applied, it is more than probable that in the course of a score or two of generations some degree of adaptability to new conditions might have been developed. But the Indians were comparatively few in number, wholly without association or union, and they were suddenly exposed to the tremendous impact of a high civilization. Hence they have melted away like snow in spring time. The negro has been saved from a similar fate by his extraordinary natural fecundity, his ready adaptability to a settled mode of life, and his capacity for labor.

Of the special causes that have wrought havoc among the red men, the most potent have been phthisis, scrofula, syphilis and drink. To determine the relative influence of these destructive forces would be difficult, inasmuch as in some cases one and in other cases another has probably been the most active. That a change from an active out-of-door life to an in-door life of confinement and inactivity is a most fertile source of

phthisis is a fact of which it would be impossible to overrate the importance. This fact is further emphasized by the law that phthisis increases in virulence in direct proportion to the density of the population, and especially to the proportion of the population engaged in occupations involving prolonged confinement in vitiated air. It is further illustrated by the fact that all successful forms of the climatic treatment of phthisis have this feature in common—viz., that they give the invalid the opportunity of breathing pure air.

The red man seems to have a peculiar proclivity to the evil influences of alcohol. When the opportunity presents itself, he gives way, almost without exception, to wild excess, and suffers a terrible penalty. The same tragic tale is just now being repeated amidst some of the African tribes, to whom the introduction of rum seems likely to render null all the blessings of civilization. How far tea and coffee injuriously affect uncivilized races, to whom their use has been previously unknown, is a point of great interest upon which we have little evidence. It would be a great fallacy to argue that, because certain evil results attend the use of coffee, tea, or alcohol among savage nations unaccustomed to their use, the same results must accrue to civilized peoples. It is obvious that custom and adaptability count for so much that such a crude generalization is inexcusable.—Editorial, *Lancet*.

PERSONAL RELATIONS AND RESPONSIBILITIES.

The *Canada Health Journal* for September has an article on this subject worth consideration. In addressing man, in regard to his neighbor, it says:

"Mind your own business" are words conveying most excellent advice in nearly all circumstances, but what one's own business always really is, has never been, it appears, very clearly defined, and there is one condition or relation in which one is not only justified in prying a little into one's neighbor's affairs, but in which this becomes an indispensable duty. No matter how healthy and vigorous you may habitually be, "dear reader," or how judicious, sensible and careful you may be in relation to your own individual health, and that, too, of your family, a careless, selfish or ignorant neighbor, if not closely looked after, may inflict you with a most malignant or fatal disease. You may even suspect such a neighbor, and avoid him and strive to keep your children away from him and from his, but unknowingly you may seat yourself on the cushioned car or cab seat which he has just infected by sitting on it for a time, or you may stand beside him in the shop or market place long enough for him to infect you; he may, all unintentionally, infect your well, or you may buy from some such one infected food. Your children, in spite of your utmost care, may chance to play or be long enough in contact with him to become infected with a fatal type of scarlet fever or diphtheria. You must, therefore, to a certain extent or in certain circumstances, mind your neighbor's business, or you may suffer terribly for neglecting to do so. In other words, what should be your neighbor's business becomes in these circumstances your own business.

In well organized communities special health officers,

called inspectors, are employed to look after the neighbors. The position or function of an inspector, is an exceedingly important one, therefore, and a man of special fitness, special ability with tact and good common sense, must be selected for it. Without a first-class suitable man, many causes and sources of disease and its spread may be overlooked. For safety, every home in the community in which you live, at least, however humble it may be, must be in as good a sanitary condition as your own; hygienically all must be as perfect as possible. To get the best men for such positions the pay must be liberal. Often municipal authorities do not pay such officials well, because the people,—their supporters, will not sustain them in so doing. Wise supporters, or electors, will take care that the health officials, the most important officials of the municipality, whether city or town, or only village or township, are so paid that they may have the "heart" to do their work well—to be "up betimes" and "vigilant in their calling." And indeed, at best, every man should, himself, take heed, a little, judiciously, to his neighbor's sanitary condition, even before the sense of smell is affected, and so aid the health officers, remembering that "eternal vigilance" is, too, the price of cleanliness and health.

HOSPITAL WORK AT PEKIN.

The London Missionary Society's report of the condition of this station shows that the accommodation has become quite insufficient for the number of in-patients, so that the treatment of the out-patients has become the main work of the institution. Last year the number amounted to 19,243. A great change is observed in the attitude of the poorer Chinese towards amputations, and several of these operations have been performed successfully. One case is recorded in which a cook intentionally chopped off four of his fingers for a curious reason. He was quarreling with another man, and to impress the latter with his courage and indifference to pain he deliberately mutilated himself. In another case a youth removed a portion of the calf of his leg in order to make soup for his sick father with the flesh. The father died, and the son became a patient at the hospital. One hundred and fifty-nine patients were treated for opium smoking. Attempts have been made to get rid of the habit on account of the waste of time it involves, or by reason of the impecuniosity of the victims. Several have conquered it on account of its injurious results on their bodily health. Six are reported to have been cured by home influence, and three by arguments advanced by Christian teachers. *Lancet*.

THE DURATION OF LIFE IN THE MEDICAL PROFESSION.

It is calculated, on the basis of statistics, that the average duration of the lives of medical men in Prussia, from the end of the thirtieth year onwards, is somewhat below that of the total male population of the country, though the latter includes a large number of decrepit and diseased persons, such as the nature of the medical profession excludes.

PRACTICAL NOTES.

RHEUMATISM AND GOUT.

Dr. Satterlee has written a book on this subject, and tells us that he has himself suffered from the ailments which he describes. This renders his remarks of special value, as it is not often anything is written under such circumstances.

In acute rheumatism he lays much stress upon the use of cholagogues, giving the following formula:

- R. Euonymin, gr. $\frac{1}{4}$.
Podophyllin, gr. $\frac{1}{8}$.
Aloin, gr. $\frac{1}{8}$.

M. S.—One tablet twice daily as required.

He objects to the salicylates on the grounds which show a very exceptional experience, or a no less exceptional lack of skill in their use on his part. His preference is for the alkalies, which he gives in the following forms:

- R. Potassii bicarb, \mathfrak{z} ij \mathfrak{z} ij.
Aquæ destillat. \mathfrak{z} viij.

M. S.—One fluid ounce to half an ounce of fresh lemon juice, to be taken while effervescing.

- R. Lithii benzoat. \mathfrak{z} ss.
Sodii bromid.
Potassii carbonat. pura. \mathfrak{aa} \mathfrak{z} ij.
Potassii acetat. \mathfrak{z} iss.
Sodii phosphat. \mathfrak{z} ss.
Syr. zingiberis

Aq. menth. pip. \mathfrak{aa} \mathfrak{z} vj.
M. et Sig.— \mathfrak{z} ij to \mathfrak{z} ss in half a glass of water, every four or six hours, after food.

He states that this mixture of three bases combined with five acids is effectual and agrees well with the stomach.

Dr. F. Leroy Satterlee recommends the following topical application in cases of gout:

- R. Ol. gaultheriæ,
Ol. oliuæ,
Liniment. saponis,
Tinct. aconiti,
Tinct. opii. \mathfrak{aa} \mathfrak{z} ij

M. ft. liniment.
Sig.: Apply to part.

It can be applied freely by the gentlest friction to the inflamed site, protecting afterwards with a generous covering of cotton batting.—*Times and Register*.

SALOL COLLODION.

It is recommended in the *Repertoire de Pharmacie* for July 10, 1890, to dissolve 4 parts of salol in 4 parts of ether, and then add to 30 parts of collodion, and it is stated that the application of the salol collodion to the affected parts in acute rheumatism will be followed by rapid relief of pain.—*Thera. Gazette*.

ANÆSTHESIA IN MINOR SURGERY.

In such cases as opening a bone felon, scraping a small fistula in the gums, removal of epithelio-

ma in the face, or in fact, any small operation requiring a local anæsthetic lasting from two to six minutes, Dobish (*Rundschau*, 1890), recommends the use of the following solution in a Richardson spray:

- R. Chloroformi, \mathfrak{z} iiss.
Æther, sulphuric, \mathfrak{z} iv.
Menthol, gr. xv.
M. Sig.: As a spray.

PILL FOR THE TREATMENT OF CHRONIC CONSTIPATION.

In the treatment of chronic constipation Nothnagel advises the use of the following when a laxative is necessary:

- R—Podophyllin, $4\frac{1}{2}$ grains.
Extract of aloe, 45 grains.
Extract of rhubarb, 45 grains.
Extract of taraxacum, a sufficient quantity.

Mix and divide into forty pills, of which one, two, or three may be taken at bedtime.—*Therapeutische Monatshefte*.

THREATENED ECLAMPSIA.

Prof. Parvin directs the following in cases of threatened eclampsia in pregnancy: A purgative pill:

- R—Extract aloes.
Extract colocynth, \mathfrak{aa} gr. $\frac{1}{4}$.

To be given frequently enough to keep the bowels freely open; also a hot bath each day, with a glass of hot water to be drunk while in the bath. After the hot bath, the patient must be put to bed, and wrapped in blankets. Milk diet.—*Coll. and Clin. Record*.

TO MASK THE ODOR OF ICHTHYOL.

The *Pharmaceutische Zeitung* recommends the addition of 10 per cent. of oil of citronella. The addition is said to be harmless in any case, while in rheumatism it is claimed that it will be positively beneficial. In India the oil is used to a considerable extent as a remedy in rheumatism, and, it is declared, with very good results.

PILLS FOR DYSENTERY.

Boudin, in *L'Union Médicale*, September 2, 1890, recommends the following pills for the treatment of dysentery:

- R—Ipecacuanha, 5 grains.
Calomel, $1\frac{1}{2}$ grains.
Extract of opium, 1 grain.

To be made into three pills and one given every hour, and used either for dysentery or diarrhœa dependent upon exposure to heat.

CARBOLATED OIL FOR SCABIES.

Carbolated oil (1 to 15) is strongly recommended by Tressilian (*Brit. Med. Journ.*), as preferable, in the treatment of scabies, to any preparation of sulphur.

SOCIETY PROCEEDINGS.

MISSISSIPPI VALLEY MEDICAL
ASSOCIATION.

*Sixteenth Annual Meeting, held at Louisville, Ky.,
October 8, 9 and 10, 1890.*

FIRST DAY.

The Association was called to order by Dr. J. N. Bloom, Chairman of the Committee of Arrangements, who welcomed the members to Louisville, and introduced Dr. Jos. M. Matthews, the President. He made a few introductory remarks but omitted the usual opening address, believing that the time would be better occupied in the scientific work of the session.

The first paper, by DR. FRANK WOODBURY, of Philadelphia, dealt with the complicated question of

INFECTIOUS DYSPEPSIA AND ITS TREATMENT.

The author restricted the subject to gastric dyspepsia and said he believed that the majority of cases of this sort were due to either primary or secondary infection of the stomach. Microorganisms were normally present in the stomach, and usually did no harm, but when there was dilatation or a diseased condition of the mucous membrane, fermentation was set up, and then we were called upon to treat such cases antiseptically. This was best accomplished by washing out the stomach. For this purpose he exhibited a simple but ingeniously devised apparatus.

DR. JOHN H. HOLLISTER, of Chicago, presented a few thoughts upon

HELP AND HINDRANCE TO MEDICAL PROGRESS.

In this paper he briefly reviewed the progress of medicine up to the present, showing how successive advances had been made. He indicated what direction progress would take in the future, especially calling attention to the vast unexplored fields of nervous pathology, and the chaotic condition of our therapeutics. He closed with a brief reference to higher medical education and medical journalism and their relation to progress in medicine.

DR. GEO. HULBERT, of St. Louis, presented a paper on

MECHANICAL OBSTRUCTION IN DISEASES OF THE
UTERUS.

He did not believe that stenosis was a dominant factor, and rejected *in toto* the prevalent theories of dysmenorrhœa. Out of over 10,000 cases examined *intra vitam* and 300 examined post-mortem in no single case was he able to demonstrate an obstruction that would hinder the ready flow of blood, save in the cases of pure atresia. By means of drawings made from post-mortem specimens he demonstrated that stenosis could not come from a simple bending

because of the atrophy that took place at the angle. It would not do in these cases to draw conclusions from forcibly bending a normal uterus or a rubber tube—the conditions were quite different. He regarded the pain in the so-called mechanical dysmenorrhœa to changes in the nervous and vascular supply of the uterus, caused by general conditions. He was confirmed in these views by the fact that an internal os with an opening of but 1-32 inch could discharge 120 times the normal amount of menstrual fluid; also, by the fact that 50 per centum of cases presenting all the physical conditions of stenosis—impermeability to the sound, pin-hole os, etc., never had any pain.

DR. R. STANSBURY SUTTON, of Pittsburg, presented specimens and remarks upon

THE SURGICAL TREATMENT OF UTERINE
FIBROIDS.

He strongly recommended the use of the dam and persulphate of iron in the extraperitoneal method of treating the pedicle.

DR. L. S. McMURTRY, of Danville, Ky., condemned in unmeasured terms the use of electricity, particularly in the soft variety of fibroid. The menopause also, he believed, had but a slight effect in this class of cases.

DR. C. A. L. REED, of Cincinnati, mentioned a case of soft myoma that developed in a woman 57 years of age, twelve years after the advent of the menopause.

DR. SUTTON in closing the discussion said that if the operation of supravaginal hysterectomy was persisted in, he thought it would eventually become as safe as the operation for ovariectomy.

DR. I. N. LOVE, of St. Louis, read a paper on

COFFEE, ITS USE AND ABUSE.

He regarded coffee as an antiseptic, said that it was a stimulant, and aided the secretions. A cup of black coffee was in most cases a better thing to give after an injury, than the dose of alcohol commonly administered. In excessive doses it causes insomnia, indigestion, and irregular heart's action.

DR. X. C. SCOTT, of Cleveland, O., read a paper on

THE TREATMENT OF FRACTURES OF THE FORE-
ARM BY EXTENSION, COUNTER-EXTENSION,
AND FORCED SUPINATION,

which he said was adapted to all fractures of the forearm excepting those of the olecranon process. He exhibited a specially contrived splint adapted to the method. He condemned the pistol-shaped splint, and said that by pressure alone it was impossible to separate the bones of the forearm.

DR. WM. PORTER, of St. Louis, presented a paper on

THE SELF-LIMITATION OF PHTHISIS.

(See page 568.)

DR. A. B. THRASHER, of Cincinnati, O., read a paper on

THE RELATION OF COUGH TO INTRA-NASAL DISEASE,

and mentioned several cases in which cough was dependent upon nasal reflexes. In one of these a violent spasm of coughing could be produced by touching a sensitive area, on the inferior turbinated body.

In the evening DR. JOHN A. WYETH delivered a general address upon

THE MEDICAL STUDENT.

After a humorous introduction, he gave the student of medicine some sound advice regarding his studies and the demands made upon the modern practitioner. The address was exceptionally brilliant, and well received by the large audience present.

SECOND DAY.

DR. JOSEPH RANSOHOFF, of Cincinnati, read a paper on

CHRONIC DISEASE OF THE JOINTS.

The author limited his remarks to diseases of the bones and joints of the tarsus. He mentioned curetting only to condemn it. The mortality was considerable and the chances of obtaining a useful foot were remote. Amputation should be resorted to oftener and earlier in these cases.

DR. H. C. DALTON, of St. Louis, Mo., reported six cases of

GUNSHOT INJURY OF THE ABDOMINAL CAVITY, in which the viscera were injured, with five recoveries and one death. He recommended immediate operation in all penetrating wounds of the abdomen. He condemned Senn's hydrogen gas test, though he thought it might have been useful in one of his cases. One of the cases was a stab wound of the liver necessitating a resection of the seventh rib and the slitting the diaphragm. Up to date the writer had performed laparotomy for penetrating wounds of the abdomen twenty-three times, with twenty recoveries and three deaths.

DR. M. T. SCOTT reported *A Successful Case of Operation for Gunshot Injury of Intestine.*

DR. J. B. MURDOCK, of Pittsburg, read a paper entitled

TORSION OF ARTERIES AS A MEANS FOR THE ARREST OF HÆMORRHAGE.

He relies almost wholly upon torsion for the arrest of hæmorrhage, having used it in arteries as large as the axillary, femoral and popliteal. He claimed for torsion great advantages over the ligature, both on score of sepsis and freedom from secondary hæmorrhage. It was a method quite as safe as the ligature.

DR. G. FRANK LYDSTON exhibited a specimen of what he called *Fungating Chancre*, also a spec-

imen of *Tubercular Testis* and one of *Paget's Disease*. Also a series of skulls and drawings exhibiting some modern studies in criminal anthropology.

DR. C. H. HUGHES, of St. Louis, read a paper on

THE PSYCHIC SEQUENCES OF ENTAILED AND CHRONICALLY ACQUIRED ALCOHOLISM.

The writer especially referred to the degenerations and changes in the ganglionic nervous system. This was one of the reasons why the mild attack of pneumonia carries off the alcoholic. Alcohol stood, he thought, in an intimate relation to the etiology of Bright's disease. He regarded inebriety, whether in its chronic or paroxysmal forms, as a disease.

DR. C. S. BOND read a paper entitled

UREA AND SEROUS MEMBRANES.

He claimed that the serous membranes were frequently early involved in those conditions of inadequate kidney attended by a lessening of the quantity of urea excreted. The author supported his conclusions by detailing several cases in which there was an inflammation of some serous membrane associated with a marked diminution in the amount of urea.

DR. ARCH. DIXON reported a case of

INGUINAL COLOTOMY FOR INTESTINAL OBSTRUCTION.

He prefers the inguinal colotomy to the lumbar operation, for various reasons—principally that it is more convenient, is easier carried out, and the wound is less extensive.

DR. EMORY LANPHEAR, of Kansas City, presented a paper on

THE SURGICAL RELATIONS OF HYPNOTISM.

He was satisfied that in hypnotism we had a means of producing surgical anæsthesia. He finds that only one person out of ten cannot be hypnotized. It may be produced in any one who can fix their attention upon one subject for a sufficient length of time. He preferred the method of holding a bright object just above the eyes for a time, when with soothing words, the patient would fall into the hypnotic state. Several séances were usually necessary. He considered that hypnotism was simply an abeyance of the will and reasoning powers while the emotions and perceptions were in a state of full activity.

CERTAINTY IN THE DIAGNOSIS OF TUBERCULOSIS.

DR. THEODORE POTTER read a paper on the above subject. The author said that he believed tuberculosis to be an acute, local infectious disorder, void of the slightest tendency toward self-limitation. The most essential thing in its treatment was to make an early diagnosis, and this was best done by repeated and thorough

examinations of the sputum for the tubercle bacilli.

DR. B. MERRILL RICKETTS, of Cincinnati, considered herniotomy, which he classed among the least fatal of all of the major operations. He laid especial stress upon the necessity of early operation, if there was any doubt of the nature of the tumor an operation should at once be done, as in this way only could a certain diagnosis be made. In one of his cases he had cut down upon a supposed sac of a femoral hernia and had turned out an enlarged lymphatic gland. He thought there was but one operation to do in these cases,—to at once cut down to the internal ring and unite it by sutures. Every herniotomy he believed should be followed by an effort to obtain a radical cure.

DR. HAROLD N. MOYER, of Chicago, presented a paper on

THE HYPODERMIC USE OF ARSENIC.

He recognized the irritant properties of Fowler's solution when injected beneath the skin, and he now used the arseniate of sodium, a salt of stable chemical composition, feebly alkaline and easily absorbed. He found that arsenic was less irritating when given by the hypodermatic method. Out of 127 injections he had never noted inflammation, and nothing approaching an abscess. He thought that arsenic used in this way would prove very useful in chronic skin diseases, nervous disorders, and malarial conditions.

THIRD DAY.

DR. EDWIN PICKETTS, of Cincinnati, made a few remarks upon the difficulty of diagnosing a twisted ovarian pedicle complicating a case of uterine myoma. He described a case of this kind in which sepsis preceded operation, death following on the sixth day.

DR. DAVID BARROW described

THREE CASES OF INTESTINAL OBSTRUCTION.

He advocated early laparotomy in those cases that resisted medical treatment; opium should be avoided as it masked the symptoms. In no case should a patient be allowed to pass beyond the point where an operation would be safe.

In the discussion Dr. J. A. Wyeth approved of the points brought out by the writer. He would, however, emphasize one point, when the obstruction is complete, and the symptoms urgent so that there is no time to complete an operation, he would advocate opening the bowel and so relieving some of the more urgent symptoms. He detailed a case in which this simple procedure saved a life. In answer to a question, he said it was still a mooted question whether the open method should be followed or implantation. It was largely to be decided by the condition of the patient.

DR. R. R. KIME described a

CASE OF EXTRA-UTERINE PREGNANCY

of four years and three months standing. The sac finally ruptured spontaneously, discharging a portion of the contents by the vagina. Later the discharges became foul and the patient showed signs of septicaemia. The uterus was dilated, the sac reached through that organ, and the greater portion of the foetus removed. Faeces were discharged through the vagina, but ultimately the sac closed and the patient made a good recovery. The writer thought the condition was one of interstitial pregnancy.

DR. SEATON NORMAN, in a short paper, advanced the views that organic stricture of the urethra of recent origin is best conducted by gradual dilatation. Strictures of long standing should be treated by internal urethrotomy, with antiseptic precautions, and especial effort should be made to keep the incisions aseptic for several days. These means favored early healing, and prevented much inflammation, a potent factor in causing subsequent cicatricial contraction.

In a *résumé* of the various operations upon the hypertrophied prostate, DR. W. T. BELFIELD had collected 133 cases, for details of which see editorial notes, page 582.

DR. H. O. WALKER, of Detroit, read a paper on

PERINEAL CYSTOTOMY VERSUS SUPRA-PUBIC CYSTOTOMY.

The writer detailed five operations of supra-pubic cystotomy, in his own practice, with four deaths. He detailed many of the unpleasant consequences of the operation, such as excoriations from dribbling urine, and septic infection. He did not regard normal urine as the ideal antiseptic, a position claimed for it by some surgeons. In looking over the literature at his command, he had found between three and four hundred cases of supra-pubic cystotomy with an average mortality of thirty per centum. A few operators have had a series of cases ranging from three to ten, without a death, the most remarkable of these being that of Hunter McGuire, who had only one death in twenty-one cases. In the perineal operation, out of thousands of cases, the mortality ranges from 5 to 9 per centum. He therefore concludes that perineal cystotomy is safer, simpler, has more rapid results, and is adapted to more cases than the supra-pubic operation.

DR. L. S. MCMURTRY presented a few practical points in *Midwifery*. He thoroughly believed in the antiseptic method; puerperal fever was not a fever at all, but simply sepsis. Especial stress was laid upon the necessity of examining into the surroundings of the lying-in women, the position of the water-closet, condition of the bedding, nurse, syringe, and everything that came in contact with the patient.

DR. T. B. GREENLEY read a paper on the *Ad-*

vantages of Attending Medical Societies and Reading Medical Journals. He cited some amusing incidents in the careers of men who insisted upon doing neither of these things.

DR. J. V. PREWITT presented a paper strongly advocating internal urethrotomy, which he claimed had passed from one of the graver operations, because of antiseptis, to one of very little danger.

Was it Relapsing Fever? formed the title of a paper by DR. A. D. BARR, in which he described a case in which an irregularly recurring temperature presented itself. He thought he had excluded typhoid and malarial conditions, upon which he asks the question contained in the title of the paper.

DR. FRANCIS DOWLING presented a paper

ON THE PREVENTION OF MYOPIA.

Myopia begins usually about the tenth year. It was mostly to be attributed to over-use of the eyes. The condition was hereditary—not directly, but the tendency to it. Deformity and malformations, as well as choroiditis, played a part. The inflammatory exudates stretched the membranes, and so lengthened the long diameter. All children should not study the same number of hours; myopes should have fewer hours and more light. If the general health became impaired, all study should be suspended. Latin letters and larger type should be used, and in myopes reading should be frequently interrupted and the eyes closed or fixed upon a far point. Glasses do not check the myopia, and should not be worn before the fifteenth year. Paracentesis of the cornea is useful in marked cases, and frequently prevents detachment of the retina.

A Plea for the More Extensive Use of Spectacles formed the topic of a paper presented by DR. FRANK T. SMITH. He found a large number of cases in which marked impairment of vision was not noticed. The various reflex conditions formed an important field for the use of glasses. In answer to a question, he said that myopia was never cured by the use of glasses.

DOMESTIC CORRESPONDENCE.

EDITORIAL CORRESPONDENCE.

Annual Meeting of the American Rhinological Association.

FIRST DAY.

The Eighth Annual Meeting of this Association convened at the Gault House in Louisville, October 6, with a full representation of the fellows of the Society. At nine o'clock the records of the previous meeting were presented and approved and other preliminary business considered. At ten o'clock the roll was called and the

regular meeting was formally opened with an address by the President, Dr. Arthur G. Hobbs, of Atlanta, Ga.

The afternoon session of the first day was occupied in an informal consideration of its purposes, interests and the necessary modifications of its rules to best insure the greatest success of the Association. The leading rhinologists of the country were in attendance, and the discussions controlled the entire session.

SECOND DAY.

The reading of papers being in order the first one was presented by Dr. A. B. Thrasher, of Cincinnati, O., upon the subject of "Nasal Reflex." The paper was an able résumé of the literature upon that subject and a thorough discussion of the same. It elicited an extended discussion which was participated in by a large number of the fellows.

The next paper was one upon "Nasal Cauteries," prepared by Dr. E. R. Lewis, of Indianapolis. The doctor is a strong advocate of its use, but emphatic in his demand as to careful discrimination in its use. He based his views upon the personal observation of some two thousand cases. In the discussion of this paper Dr. Thrasher was disposed to be sanguine, as to the use of the cautery, though according to it a measure of merit, but advocated more fully the use of other local remedies.

Dr. Stuckey, of Louisville, read a paper upon "Tonsillar Hypertrophy," referring to their influence upon nasal and aural inflammations and their treatment.

Dr. E. R. Lewis, of Indianapolis, read a paper on "Nasal Cauteries," strongly advocating the use of the storage battery, basing his conclusions upon personal observation of some two thousand cases, and dwelt very fully upon the pathological conditions in which cauterization was indicated. Dr. Thrasher was less sanguine as to the beneficial results to be obtained from the cautery and gave his own views as to the value of other remedies. Nearly all the members participated in the discussion.

The afternoon session of the second day was opened with a paper by Dr. John North, of Toledo, O., upon "Nasal Hypertrophys," in which the neurotic conditions and pathologic conditions of thickened membranes were considered and the whole subject of cauterization and of topical applications underwent review.

Dr. T. C. McGahn, of Chattanooga, Tenn., read an interesting paper entitled "Polipii and Other Nasal Growths." This paper was fully discussed. The administration of morphine by the nostril was the subject of a brief article by Dr. C. H. von Klein, of Dayton, O. Other papers were presented and discussed: one by Dr. J. G. Carpenter, of Stanford, Ky., upon "Nasal and Pharyngeal.

Manifestations of Syphilis—Results and Treatment."

"Hygiene of the Upper Respiratory Organs" was discussed by Dr. L. B. Gillette, of Omaha, Neb. "Hay Asthma" was again discussed, the opening paper being by Dr. A. De Vilbiss, of Toledo, O. Dr. Emmett Walsh, of Grand Rapids, Mich., presented a paper entitled "The Relation of Naso-Pharyngeal Diseases to Catarrh of the Middle Ear."

Papers by new members were omitted the time having been fully occupied by those standing first upon the programme. Members of the profession were impressed with their value, and in the discussions it was evident that men who were specialists in this class of diseases were specially fitted for their most successful treatment. The specialist here, as elsewhere demonstrates his right to be.

Indianapolis was designated as the place for the meeting in 1891.

J. H. H.

MISCELLANY.

LETTERS RECEIVED.

Wm. R. Warner & Co., Philadelphia; Dr. J. O. Roe, Rochester, N. Y.; Dr. T. Wertz, Evansville, Ind.; E. B. Ryan, Bay City, Mich.; Dr. W. L. Beebe, St. Cloud, Minn.; J. W. Harrison, Jersey City, N. J.; Dr. T. E. Murrell, Little Rock, Ark.; Dr. G. E. de Schweinitz, Philadelphia; Antikammia Chemical Co., St. Louis; W. H. Moore, Brockport, N. Y.; Dr. H. R. Purdy, New York; Subscription News Agency, Chicago; Dr. Wm. B. Atkinson, Philadelphia; N. Y. Post-Graduate Medical School, New York; Dr. N. Senn, Milwaukee, Wis.; Dr. S. P. Deahofe, Potsdam, O.; Dr. A. Blitz, Indianapolis, Ind.; S. S. White Dental Mfg. Co., Philadelphia; American and Continental Sanitas Co.; J. Movius & Son, New York; McLean & Co., Atlantic, Ia.; James F. Madden, New York; Dr. H. P. Millard, Minneapolis, Minn.; Dr. Walter Wyman, U. S. M. H. S., Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 4, 1890, to October 10, 1890.

Lieut.-Col. Chas. C. Byrne, Surgeon, is relieved from duty as attending Surgeon at the Soldiers' home, near this city, and will report in person to the commanding officer, Ft. Sam Houston, Tex., for duty at that station. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Capt. Jas. A. Finley, Asst. Surgeon, is relieved from duty at Ft. Totten, N. Dak., and will report in person to the commanding officer, Jefferson Bks., Mo., for duty at that station, relieving Capt. Wm. D. Crosby, Asst. Surgeon. Capt. Crosby, on being relieved by Capt. Finley, will report in person to the commanding officer, Ft. Pembina, N. Dak., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Lieut.-Col. Joseph C. Bailly, Asst. Medical Purveyor, Medical Director of the Department, is granted leave of absence for one month. Par. 3, S. O. 86, Dept. of Texas, October 3, 1890.

First Lieut. Leonard Wood, Asst. Surgeon, leave of absence granted in S. O. 74, August 3, 1890, Dept. of Cal-

ifornia, is extended one month. By direction of the Secretary of War. Par. 7, S. O. 232, A. G. O., Washington, October 3, 1890.

Major Henry M. Cronkhite, Surgeon, is relieved from duty at Ft. Lewis, Col., and will report in person to the commanding officer, Ft. Trumbull, Conn., for duty at that station, relieving Capt. Robert J. Gibson, Asst. Surgeon. Capt. Gibson, on being relieved from duty by Maj. Cronkhite, will report in person to the commanding officer, Ft. Sam Houston, Tex., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Major William H. Gardner, Surgeon, is relieved from duty at Washington Bks., D. C., to take effect on the arrival of Major Joseph K. Corson, Surgeon, and will report in person to the commanding officer, Angel Island, Cal., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Capt. Wm. C. Borden, Asst. Surgeon, is relieved from duty at Ft. Sam Houston, Texas, upon the arrival of Lt.-Col. C. C. Byrne, Surgeon, and will report in person to the commanding officer, Ft. Davis, Texas, for duty at that station, relieving Capt. Peter R. Egan, Asst. Surgeon. Capt. Egan, on being relieved by Capt. Borden, will report in person to the commanding officer, Ft. Warren, Mass., for duty at that station, relieving Capt. Geo. McCreery, Asst. Surgeon. Capt. McCreery, on being relieved by Capt. Egan, will report in person to the commanding officer, Ft. Clark, Tex., for duty at that station, relieving Capt. Chas. M. Gandy, Asst. Surgeon. Capt. Gandy, on being relieved by Capt. McCreery, will report in person to the commanding officer, Ft. Shaw, Mont., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Major Curtis E. Munn, Surgeon, is relieved from duty at Angel Island, Cal., and will report in person to the commanding officer, Ft. Monroe, Va., for duty at that station, relieving Major John Brooke, Surgeon. Major Brooke, on being relieved by Maj. Munn, will report in person to the commanding officer, Ft. Leavenworth, Kan., for duty at that station, relieving Major Alfred A. Woodhull, Surgeon. Maj. Woodhull, on being relieved by Maj. Brooke, will report in person to the commanding officer, Ft. Sherman, Idaho, for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

By direction of the Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered:

Major Geo. M. Sternberg, Surgeon, is relieved from duty as attending surgeon and examiner of recruits at Baltimore, Md., and as a member of the Army Medical Board, appointed to meet in New York City, and will repair to San Francisco, Cal., and take charge of the Medical Purveying Depot at that place, as Acting Asst. Medical Purveyor, relieving Col. B. J. D. Irwin, Surgeon. Col. Irwin, on being thus relieved, will report in person to the commanding General, Dept. of the Columbia, for assignment to duty as Medical Director of that Department, and as Post Surgeon, Vancouver Bks., Wash., relieving Major William E. Waters, Surgeon, now Post Surgeon, and temporarily in charge of the Medical Director's Office. Major Waters, on being thus relieved, will report in person to the commanding officer, Ft. Custer, Mont., for duty at that station. Par. 8, S. O. 232, A. G. O., October 3, 1890.

Major Van Buren Hubbard, Surgeon, is relieved from duty at Columbus Bks., O., and will report in person to the commanding officer, Ft. Spokane, Wash., for duty at that station, relieving Capt. Henry S. Turrill, Asst. Surgeon. Capt. Turrill, on being relieved by Maj. Hubbard, will report in person to the commanding officer, Madison Bks., N. Y., for duty at that sta-

tion, relieving Major John D. Hall, Surgeon. Major Hall, on being relieved by Capt. Turrill, will report in person to the commanding officer, Ft. Canby, Wash., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

First Lieut. Allen M. Smith, Asst. Surgeon, is relieved from duty at Ft. Snelling, Minn., and will report in person to the commanding officer, Ft. Assiniboine, Mont., for duty at that station, relieving Asst. Surgeon Paul Shillock. Lieut. Shillock, upon being relieved, will report in person to the commanding officer, Ft. Custer, Mont., for duty at that station, relieving Capt. Wm. R. Hall, Asst. Surgeon. Capt. Hall, upon being relieved by Lieut. Shillock, will report in person to the commanding officer, Ft. Schuyler, N. Y., for duty at that station, relieving Capt. Norton Strong, Asst. Surgeon. Capt. Strong, on being relieved by Capt. Hall, will report in person to the commanding officer at Ft. Meade, S. Dak., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Capt. Rudolph G. Ebert, Asst. Surgeon, is relieved from duty at Angel Island, Cal., to take effect upon the arrival at that post of Major Wm. H. Gardner, Surgeon, and will then proceed to Vancouver Bks., Wash., and report for duty to the commanding officer of that post. By direction of the Secretary of War. Par. 15, S. O. 232, A. G. O., Washington, October 3, 1890.

Capt. Robert B. Benham, Asst. Surgeon, will proceed from Ft. Hamilton, N. Y., to Mount Vernon Bks., Ala., and report in person to the commanding officer of that post for temporary duty, relieving Capt. John J. Cochran, Asst. Surgeon, who will return to his proper station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

Capt. C. N. Berkeley Macauley, Asst. Surgeon, is relieved from duty at Ft. Supply, Ind. Ter., and will report in person to the commanding officer, Ft. Lewis, Col., for duty at that station. By direction of the Secretary of War. Par. 2, S. O. 233, A. G. O., Washington, October 4, 1890.

Capt. Robert J. Gibson, Asst. Surgeon, is granted leave of absence for three months, to take effect on being relieved from duty at Ft. Trumbull, Conn., by Major Henry M. Cronkhite, Surgeon. By direction of the Secretary of War. Par. 12, S. O. 232, A. G. O., Washington, October 3, 1890.

Capt. Walter Reed, Asst. Surgeon, is relieved from further duty at Mount Vernon Bks., Ala., and assigned to duty as Attending Surgeon and Examiner of Recruits at Baltimore, Md. By direction of the Secretary of War. Par. 7, S. O. 233, A. G. O., Washington, October 4, 1890.

Capt. Arthur W. Taylor, Asst. Surgeon, is relieved from duty at Ft. Wingate, N. M., to take effect on the expiration of his present sick leave of absence, and will report in person to the commanding officer, Ft. Adams, R. I., for duty at that station, relieving Capt. J. J. Cochran, Asst. Surgeon. Capt. Cochran, on being relieved by Capt. Taylor, will report in person to the commanding officer, Camp Eagle Pass, Texas, for duty at that station, relieving First Lieut. Paul Clendenin, Asst. Surgeon. Lieut. Clendenin, on being relieved by Capt. Cochran, will report in person to the commanding officer, Ft. Brady, Mich., for duty at that station. By direction of the Secretary of War. Par. 8, S. O. 232, A. G. O., Washington, October 3, 1890.

PROMOTIONS.

Asst. Surgeon Edward R. Morris, to be Asst. Surgeon with the rank of Captain, September 27, 1890, in accordance with the Act of June 23, 1874.

Lieut.-Col. Bernard J. D. Irwin, Asst. Medical Purveyor, to be Surgeon with the rank of Colonel, August 28, 1890.

Major Blencowe E. Fryer, Surgeon, to be Asst. Medical

Purveyor, with the rank of Lieut.-Col., August 28, 1890. Capt. Stevens G. Cowdrey, Asst. Surgeon, to be Surgeon with the rank of Major, August 28, 1890.

APPOINTMENT.

Col. Edward P. Vollum, Surgeon, to be Chief Medical Purveyor, with the rank of Colonel, August 28, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October, 11, 1890.

Wm. C. Braisted, Detroit, Mich., appointed an Asst. Surgeon in the U. S. Navy.

Medical Director P. S. Wales, detached from temporary duty as member of Medical Examining Board.

Pd. Asst. Surgeon H. E. Ames, detached from temporary duty as member of Medical Examining Board.

Surgeon C. G. Herndon, ordered to Naval Hospital, New York.

Surgeon R. C. Persons, detached from Naval Hospital, New York, and wait orders.

Pd. Asst. Surgeon H. B. Scott, ordered before the Retiring Board.

Surgeon A. F. Price, detached from Naval Dispensary, Washington, D. C.

Pd. Asst. Surgeon Frank Anderson, ordered to Naval Dispensary, Washington, D. C.

Medical Inspector C. H. White, ordered to hold himself in readiness for duty to U. S. S. "San Francisco."

Asst. Surgeon W. C. Braisted, ordered to Army and Naval Hospital, Hot Springs.

Asst. Surgeon L. W. Spratling, ordered to hold himself in readiness for orders to the U. S. S. "San Francisco."

Surgeon C. A. Siegfried, ordered to the U. S. Training Ship "New Hampshire."

Asst. Surgeon N. P. Blackwood, detached from duty in the Bureau Medicine and Surgery and granted leave of absence.

Asst. Surgeon L. H. Stone, detached from the U. S. S. "New Hampshire" and wait orders.

Pd. Asst. Surgeon Jno. M. Edgar, ordered to hold himself in readiness for duty on the U. S. S. "San Francisco."

Pd. Asst. Surgeon J. E. Gardner, detached from the "Albatross" and wait orders.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending October 4, 1890.

Surgeon W. H. H. Hutton, detailed as Chairman Board of Examiners. October 2, 1890.

Surgeon W. H. Long, detailed as member Board of Examiners. October 2, 1890.

Surgeon Geo. Purviance, granted leave of absence for thirty days. September 10, 1890.

Surgeon John Godfrey, detailed as recorder Board of Examiners. October 2, 1890.

Pd. Asst. Surgeon W. A. Wheeler, to proceed to New Orleans, La., for temporary duty, October 3, 1890.

Pd. Asst. Surgeon C. E. Banks, granted leave of absence for twenty days, October 3, 1890.

Pd. Asst. Surgeon R. P. M. Ames, to proceed to New Orleans, La., for duty, September 13, 1890.

Pd. Asst. Surgeon W. J. Pettus, to proceed to Vineyard Haven, Mass., for temporary duty, October 1, 1890.

Asst. Surgeon S. H. Hussey, to proceed to New Orleans, La., for temporary duty, September 19, 1890. To proceed to Norfolk, Va., for temporary duty, October 3, 1890.

Asst. Surgeon C. P. Wertenbaker, granted leave of absence for twenty days. September 12, 1890.

Asst. Surgeon J. C. Perry, upon expiration of leave to rejoin station at Mobile, Ala. September 29, 1890.

Asst. Surgeon G. B. Young, to proceed to Memphis, Tenn., for temporary duty, September 13, 1890. To rejoin station St. Louis, Mo., when relieved at Memphis, Tenn., October 3, 1890.

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No. 17.

ORIGINAL ARTICLES.

CURE OF CLEFT PALATE BY A DOUBLE FLAP OPERATION AND CLOSURE WITH THE BURIED TENDON SUTURE.

Read in the Section of Dental and Oral Surgery, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY HENRY O. MARCY, M.D.,
OF BOSTON, MASS.

Nearly all surgical operations have had their distinctive modifications, with surprising gain in the result, based upon the knowledge of the rôle of bacteria in wounds. In large measure, however, the surgery of the mouth, the throat, and the nasal passages, has proved an exception, since all wounds of these tissues, as ordinarily treated, must be looked upon as extremely liable to become infected from the ever-present bacteria, existing normally in the mucous secretions of the tract, and necessarily conveyed to it in respiration and in the taking of food.

Dentistry, as an art, may be said to have commenced with the present generation; as a science, within the last few years; since by the labors of Miller, Nelson, Andrews, and others, the demonstration is ample that dental decay is dependent upon bacterial development within the structures of the teeth. All scientific observers now agree that the preservation of a diseased tooth is dependent upon the removal of the infected portion, and the treatment of the member in such a way as to preserve permanently its tissues aseptic. These principles, when applied to the treatment of a single tooth, are comparatively simple and easy to carry into effect. When the cancellated structure of the jaw, or any of the bones forming the nasal, or oral tract, are involved, the conditions are much more serious, and the limitations, or removal of the infected parts, often form problems very difficult of solution.

Wounds of the soft parts, even when made through comparatively healthy tissues and closed with the greatest nicety, by the surgeon, at the time of operation, often heal very unsatisfactorily, becoming the seat, at least, of a local infection, and repair either fails entirely, or goes on slowly

by the processes of granulation. This has its explanation from the great difficulty of excluding infective material from the wounded surfaces, and the reason why general septic infection with its attendant danger is not more common, is found in the extraordinary vascularity, affording a better protective nutrition of the parts involved.

Plastic surgery of the oral cavity has made comparatively little advance, for the above reasons, although it is almost entirely revolutionized, in other parts of the body, by modern surgical procedure.

Operative measures for the relief and cure of cleft palate generally fail on account of non-closure of the wound, dependent upon infection and difficulty of the retention of the parts at rest, especially at its free, or distal, extremity. During the last few years the attempt at repair is less often made by the surgeon, than formerly, doubtless, in large measure, due to the extremely ingenious and useful mechanical devices in the way of artificial plates, one of the distinctive triumphs of American mechanical dentistry.

I confess myself to have given over the field, as one entirely unfruitful of surgical relief, until within the last year, when I carried into effect, in a single case, the method which forms the subject of this brief contribution.

Miss J., age 25, a strong and healthy woman, has a congenital cleft of the soft palate with only slight indentation of the bony structures. Each half of the uvula is well developed, and by moderate tension the edges of the cleft can be brought into apposition. After a careful explanation of the intended procedure, the patient gladly availed herself of the hoped-for results from operation. Aided by Dr. Charles Bullock and Dr. S. N. Nelson, I commenced the operation by the introduction of a tracheotomy tube. With careful washing and irrigation, the nasal and oral passages were rendered aseptic, using freely a sublimate solution of strength 1-1000. After the introduction of the mouth-gag and packing the pharynx with an aseptic sponge, the soft palate was seized upon either side, the edges slightly refreshed with scissors and split laterally to the depth of about one-third of an inch. The posterior flaps thus formed were carefully joined by a very fine over-and-over tendon suture. A somewhat larger

suture, commencing at the angle at the base of the division of the flap, was carried laterally from side to side, through the centre of the soft palate, a little beyond the line of lateral division. This line of sutures extended quite to the uvula. The approximation of the sides of the wound necessarily everted the edges and by so much increased the fresh surfaces brought in contact, while at the same time it completely buried the line of sutures. The everted edges, presenting in the roof of the mouth, were then carefully joined by a very fine continuous tendon suture. Two double-looped stitches, taken as far away from the central line as possible, were then introduced in order to prevent any lateral strain upon the central wound. The mouth and nose were closed and only rarely required to be cleansed of mucus during the four subsequent days; after cleansing they were dusted with iodoform by means of the iodoform blower. Respiration went on comfortably through the tracheal tube. A large injection of weak beef tea, given once in six hours, served the purpose of food and drink. The wound remained non-infected, and repair ensued as in aseptic wounds in other parts of the body, with the exception of the tip of the uvula, where a small slough formed from over-constriction of the suture.

The above case is reported as an experimental study, and is at least instructive as giving possibilities of better surgical results than those generally obtained in this most distressing deformity. If such seeming heroic procedure, as antecedent tracheotomy, may meet the approval of the profession, is a question for discussion. Without it, all attempt at rigid antiseptic conditions of the parts is seemingly futile. External wounds of the body are readily sealed from bacterial infection by the simple application of iodoform colloid, but thus far all attempts have failed in protecting mucous surfaces by germ-proof dressings, and we are under the necessity of making the cavity itself aseptic, and maintaining it in this condition until repair can ensue, or of accepting the dangers of infection which, when respiration is allowed to go on in the usual manner, generally gives failure in result.

The advantages of the use of the tendon suture in this operation appear to be equal to those claimed for it in operative wounds in other parts of the body; and, if this is true, it is the only suture material to be recommended for this operation. If it shall happen to me to attempt again the repair of these parts, a modification of instruments would simplify, in a considerable degree, the operation. Forceps bent at a suitable angle, the blades protected by rubber tubing to prevent injury of the enclosed parts, would greatly facilitate the seizure and holding of the flap, preparatory to splitting it. The division also can be effected easier by a knife, the blade of which is at a suitable

angle to the handle. The needle forceps also need special adaptation of the curve for the easy introduction of the sutures. Any practical surgeon, however, can effectually operate with the instruments ordinarily at his disposal.

Boston, 116 Boylston St., May, 1890.

DR. JOHN S. MARSHALL, of Chicago, said: At the request of the Secretary of the Section I have consented to open the discussion upon this paper, and through the courtesy of Dr. Marcy I have had an opportunity to give it a somewhat careful reading. I consider the paper a valuable one, in that it presents an entirely new method of operation for closing cleft palate. Whether it will revolutionize the common practice in this operation, time and experience only can establish. It is, however, a step in the right direction, as it looks toward establishing and maintaining an aseptic condition of the mouth during the operation and the process of repair in the wound.

Those of us who have had experience in operations upon the soft tissues and bones, in and around the oral cavity, will appreciate how great a boon thorough aseptic conditions would be in all wounds opening into the mouth, and how difficult it has been to prevent suppuration in compound fractures and other extensive injuries to the maxillary bones. Miller, in his researches, has found more than a hundred forms of micro-organisms in the human mouth, including nearly all the pathogenic forms known to science, while the most cleanly mouths are found to be the constant habitat of a variety of forms. It would therefore seem to be an Herculean task to cleanse the mouth and render it thoroughly aseptic even by the method suggested by the essayist.

It has been my practice for years to combat the tendency to infection by the use of solutions of bichloride of mercury, and of carbolic acid of various strengths, the parts being irrigated and sprayed with them at frequent intervals. Dr. Marcy's method, however, could hardly be utilized in cases of severe compound comminuted fractures of the jaw, where many times, under the most favorable circumstances, it requires from two to three weeks to heal the external wound, and serious results might follow such prolonged tracheal breathing and feeding by the rectum.

In the operation of staphylorrhaphy, I believe the aseptic method will prove of great value, though to the patient tracheotomy and the plugging of the throat and nose will seem very formidable, and will deter a great many from availing themselves of the offered benefits.

With the new features of the operation itself, I am still more pleased.

The great difficulties in the way of a successful result in closing of the *vellum palati* have been to obtain perfect coaptation of the freshened edges, the prevention of tension upon the stitches

and perfect rest of the parts. By Dr. Marcy's operation these are largely overcome. In the lateral splitting of the *vellum* along the border of the cleft, the fresh surfaces are greatly increased, and by that much it would seem to add to the chances of successful union.

The method of stitching is unique, and the use of the buried tendon suture adds to the possibility of a successful result, though at first thought it would seem somewhat difficult to accomplish, except by instruments specially devised.

The result in the case reported is, however, no better, in fact, not so good, as in some cases which have been treated by the old methods of operating, as primary union through the whole extent of the wound is sometimes obtained by them. By the old methods about one in four are failures, but Dr. Marcy's method gives promise of better results, and until such time as it has received a fair trial we should withhold our judgment.

I trust Dr. Marcy will keep the profession advised in regard to all his future efforts in this direction, and I assure you it shall have a fair trial at my hands.

A CASE OF STATIC LENTICULAR ASTIGMATISM ACQUIRED BY THE LONG CONTINUED USE OF SPECTACLES HAVING A FAULTY POSITION.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY GEO. E. FROTHINGHAM, M.D.,
OF DETROIT, MICH.

That dynamic astigmatism of the lens may exist has been recognized since Donders published his classical work in 1864, and it is now generally conceded that an unequal contraction of the ciliary muscle may exist, producing irregular curvature of the crystalline lens and often producing a sensation like that attending accommodation for the *punctum proximum*, with its accompanying fatigue and asthenopic symptoms. This astigmatism has often been observed in practice associated with corneal astigmatism, which it modifies in various degrees, sometimes increasing, sometimes partially, sometimes fully, and at other times over-correcting it. Owing to a cessation of this action as a result of loss of accommodation from age or from the use of mydriatics, corneal astigmatism that had previously been concealed, becomes manifest. Or what had appeared to be a myopic astigmatism may be shown to be a hyperopic corneal astigmatism. The question as to whether this dynamic astigmatism may lead to an altered form of the lens from a spherical to an ovoid form, so as to constitute a condition of

static lenticular astigmatism, is one which has not been plainly demonstrated, though from theoretical considerations we must accept it as a probable result of long continued action of this kind at a period of life when the eye is developing or while the lens responds actively to the contractions of the ciliary muscle. A permanent and symmetrical increase of the convexity of the crystalline lens, leading to myopia, has long been acknowledged as due to the excessive and long continued strain of accommodation. This kind of myopia, sometimes called *pleisiopia*, was demonstrated in the early investigations of refraction and accommodation, and Stellwag credits Cramer with having been the first to demonstrate by suitable instruments an increased curvature of the lens in some cases of myopia, just such as is found in emmetropes when accommodating for a near object. While many of the ordinary pursuits of life have furnished abundant opportunity to observe the effect of an overstrained accommodation to produce myopia, only careful observation of cases both before and after, the use of improperly fitting glasses, can be expected to demonstrate the production of permanent lenticular astigmatism. Experiments with cylindrical lenses, for obvious reasons, would be highly improper and would not be submitted to. The faulty position of spherical lenses, so generally met with, and acting in the same way cylinders would, afford us the opportunities for observing the result, if only careful observation of the condition of refraction is made and recorded both before and after the prolonged use of such spectacles. In the following case such observation was made and as published reports of the kind have not come to my notice, I thought it worth while to put this case on record:

W. F. K., aged 19, of Grand Rapids, Mich., came to me on the 19th of October, 1881, suffering from asthenopia. Vision of each eye was $\frac{3}{8}$ +, and there was no manifest error of refraction on subjective test. Græfe's test showed 2° insufficiency of the internal rectus, though he could converge to 2 $\frac{3}{8}$ inches. In reading he found comfort from the use of +1 D. S., slightly decentered so as to act the same as weak prisms, base inward. I next saw him on March 1, 1882. He stated that he was much relieved by his glasses until a short time before this second visit, but that his symptoms had lately returned and he was as much troubled as formerly. His vision was still $\frac{3}{8}$ sharp, and there was no manifest error of refraction or muscular insufficiency. He could use his eyes with comfort for reading only when a convex spherical, 1.50 D. was supplied, and so these were temporarily prescribed and he was advised to rest his eyes by the use of atropia if his symptoms were not soon relieved. On the fourth day after this he returned as bad as ever, and the use of atropia was commenced. On the 6th of

March a careful test revealed hyperopia varying from 0.50 D. to 0.75 D. in each eye. No astigmatism was manifested. Atropia was continued and on the ninth and eleventh tests were carefully made with the same result. Atropia was continued and on the thirteenth an examination showed accommodation completely relaxed and the patient manifested no hesitancy in selecting glasses, H. = 0.75 D. in each eye with no astigmatism. With H. corrected vision of each eye was $\frac{3}{8}$ +. Atropia was continued and on the fifteenth and seventeenth tests were made with the same results. Atropia was now discontinued and on the twenty-seventh a test showed H. 0.75 D. in each eye. Convex sphericals, 0.75 D. were prescribed for constant wear, and he was given +1.50 D. S. for reading and instructed to begin use of his eyes gradually by Dyer's method, holding his book at sixteen or eighteen inches distance. The patient was an industrious student of law, and read almost constantly.

I did not see him again nor did I hear from him until the 27th of September, 1886, when I was written to by Dr. R. J. Kirkland, an oculist of Grand Rapids, asking for my notes of his case. The patient had consulted Dr. K. on June 22, 1886, and as he had continued his excessive reading, was again suffering severely from asthenopia, and a test was made which did not call for the glasses he was wearing for distance at the time, *i. e.* +0.75 D. S., that I had prescribed for him more than four years before. At this date he rejected all glasses for distance, except a $-\frac{1}{6}$ C. ax. 90° .

The following notes of the examination on June 22, 1887, and subsequent treatment, have been kindly furnished to me by Dr. Kirkland: R. E. V. = $\frac{3}{8}$ +, with $-\frac{1}{6}$ cyl. ax. 90° V = $\frac{3}{8}$; L. E. V. = $\frac{3}{8}$ +, with $-\frac{1}{6}$ cyl. ax. 90° V = $\frac{3}{8}$. Nine instillations of a solution of atropia, eight grains to the ounce, were made within three days, and accommodation completely paralyzed. In this condition his refraction was changed to hyperopic astigmatism in the vertical meridian. Record showed R. E. V. = $\frac{3}{8}$ —, with $+\frac{1}{6}$ cyl. ax. 0° , V = $\frac{3}{8}$ +; L. E. V. = $\frac{3}{8}$ —, with $+\frac{1}{6}$ cyl. ax. 0° V = $\frac{3}{8}$ +. After the effects of the atropia had passed off an examination showed a like result, and these convex cylindrics were prescribed for constant use. After this no further trouble was experienced and two years afterward, when Dr. K. reported last to me, the refraction had continued the same and the patient could use his eyes as much as he desired without the least discomfort. In his first letter Dr. Kirkland informed me that the patient had broken his reading glasses soon after he last consulted me, and, on applying to an optician, he had been given +3 D. S., which he had used for reading for the last four years and a half preceding Dr. K's examination. I wrote to Dr. K. stating my belief that

this astigmatism had resulted from the faulty position of these strong lenses, which as usually set by opticians, were probably more nearly vertical than they should be for reading. I requested him to examine with reference to this point and report to me the facts. Fortunately the spectacles had been preserved and a careful examination showed that in reading the visual axis formed a vertical angle of about 23° with the principal axis of the lens, the lenses having their horizontal axes parallel with the surface of the face. The strength of these lenses necessitated the approximation of the book to within about twelve inches of the eye. This would cause the angle between the rays of light and the principal axis of the lens to be about 6° in the horizontal meridian, leaving a balance of 17° for increase of refraction in the vertical meridian of the lens, with a consequent lessened demand on the refraction of the eye in this meridian. By experimenting at this reading distance (12 inches) with a convex lens of three dioptries, so placed before the eye that there is formed a vertical angle of 17° between its principal axis and the visual axis, I find the refraction increased in the vertical meridian to the extent of a lens of about 0.75 D. To compensate for this and avoid astigmatism, the crystalline lens must increase its refraction in the horizontal meridian to the same amount (0.75 D.). In a state of spasm of accommodation with the reading lenses off, this would appear, as it did in this case, as myopic astigmatism in the horizontal meridian. But when the spasm of the ciliary muscle was relaxed by the use of a mydriatic it would appear as hyperopic astigmatism in the vertical meridian.

In this case it appears that by this long continued exertion of the ciliary muscle to compensate for the artificial astigmatism, produced by the faulty position of these spectacles, the form of the crystalline lens was permanently changed so as to correct hyperopia of 0.75 D. in the horizontal meridian, while it left its refraction in the vertical meridian unchanged.

In the first series of tests the dioptric system of measurement was observed; in the second the inch system was followed, and in the latter case the 60-inch lens would come as near to the 0.75 D. as could be decided upon by a patient in making a subjective test. Prof. Zehender, who made a large series of experiments as to this effect of faulty position of lenses, found that a convex lens of 3 D. rotated at an angle of only 5° , caused decided blurring of vision, and he expressed his belief that permanent lenticular astigmatism could be produced by such faulty position of lenses. The above case, in my opinion, is one demonstrating the truth of this theory. The tests were made in the first instance with the greatest accuracy, both by Dr. J. G. Kennan, my assistant at that time, and by myself. Dr. Kirkland is a

very careful and competent oculist, and that the refraction of the eye had changed is shown not only by his findings in these tests, but by the fact that when asthenopic symptoms became so unbearable in 1886, the patient's distant vision was reduced to $\frac{3}{8}$ + and could only be raised to normal by supplying the cylindrical glasses.

That it was acquired static lenticular astigmatism is shown by the effect of the atropia, the former known condition of refraction, and the result obtained by supplying the required lens. Whether or not this case was of the nature I suppose, the question of proper position of lenses is one of the most important that can engage the attention of those who undertake refractive work, and a large proportion of the time of oculists, must of necessity, be devoted to such examinations. I have known of instances where a most conscientious and skillful examination of the eyes has been made and the whole object of the oculist thwarted by the optician who filled the prescription. Even the most noted opticians often pay little attention to the measurements for frames that are furnished by the oculist, and these measurements are often, I believe, far too hastily and imperfectly made. Almost no attention is paid to that rotation of the lenses that is required to bring their principal axis to correspond with the line of vision, and often we find them set half an inch or so farther forward than they should be, and elevated to the eyebrows, or set down upon the cheeks. In this way great injustice is done to the oculist, who is alone held responsible if annoyance results to the patient, who often never gives him an opportunity to examine the glasses, and correct the faulty position resulting from a disregard of his directions.

One of the most important aids to work of this kind will be the construction of such trial lenses and frames as to allow lenses to be placed in a proper position while tests are being made. Another will be the device of some more suitable adjustable frame for readily making the measurements for the guidance of the optician in making the frames and mounting the lenses prescribed. That some ingenious mechanic will apply himself to this task and give us that which many of us so long have sought, is earnestly wished by not a few whose time is so taxed by the present methods commonly adopted in practice. Whoever trusts this work of fitting the frames to an optician will often find his prescription nullified, and his reputation injured by the incompetence or unfaithfulness of the spectacle venders who style themselves opticians.

I have no doubt that many cases of astigmatism of a low degree may be acquired by a faulty position of spectacles, and that we fail to relieve many cases of asthenopia, either because we do not pay sufficient attention to the position of the lenses while making the test, or in measuring for

frames, or because the optician has disregarded our directions in the matter.

DR. RANDALL called attention to the fact that the change in astigmatism has been proved by the ophthalmometric measurement. Ciliary action is, therefore, excluded, as well as lenticular obliquity. It has been shown that "astigmatism against the rule" is extremely frequent in glaucoma; and further, both clinical and experimental study has shown increase or occurrence of this form of astigmatism with the rise of tension. It may, therefore, be an important prodromal sign of glaucoma.

DR. FROTHINGHAM in closing the discussion said: I have presented this case for the reason that I think it may be of some value in the settlement of this theory. I admit it wants the element of certainty that can only exist where the curvature of the lens is accurately measured both before and after the appearance of the astigmatism. In ordinary practice this measurement of curvature is not made. In this case, however, an altered form of the lens is the only rational explanation that harmonizes with all the observed facts. The paper will furnish my answer to most of the questions raised.

It may possibly be true that corneal astigmatism may have developed in this case, but the direction of the axes of greatest and least refraction do not correspond to what we would expect from corneal change while they do with the theory of acquired lenticular astigmatism from the cause supposed. The degree of astigmatism acquired also just corresponded with the theory advanced. It would be a strange coincidence if changes of the cornea should extend to just this degree, and in meridians to correspond to this.

LENS MEASURER.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY ROBERT TILLEY, M.D.,
OF CHICAGO, ILL.

The instrument I have to exhibit to you is not my invention. It is a device for the practical ready and accurate measurement of the curvature of lenses, and indirectly, of course, the measurement of the focal lengths of lenses of the average size used in optical devices for the amelioration of defective vision. It is of interest to us in the ready means it affords of checking formulæ for glasses, and in readily and accurately determining the combination of lenses which may come under our observation in our daily dealings with patients. It is not an easy matter to determine, by the method of neutralization, the combination of a compound lens. At any rate, I do not blush to acknowledge that it is not an easy matter for

me. Take any example at random: S. + 4.00 \bigcirc + 1.00 c. ax. 180; or, S. - 2.25 \bigcirc - 0.75 c. ax. 45°. It is not difficult to determine the axis of a cylinder, but this device renders it easier, and at the same moment, with a single turn of the hand, it gives us the radius of curvature, and by inference, the focal power.

I will first explain, by a diagram, the general principle on which the instrument is constructed, and then it will be evident to you that it is capable of doing the work it claims to do, and then the instrument will be handed to you for your own personal demonstration. I have brought a few lenses with me for that purpose.

The diagram (Fig. 1) shows the face of the in-

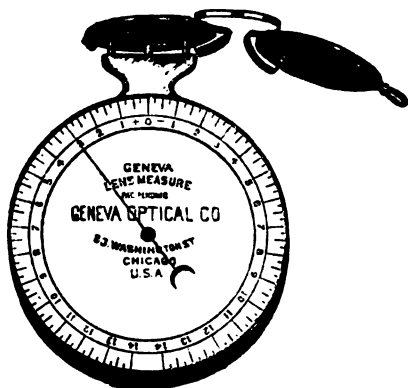


FIGURE 1.

strument. It is represented as measuring a plano-convex lens of + 3 dioptries. The highest part of the dial is marked 0. The space on either side down to the corresponding part below is divided similarly, the divisions gradually but slightly decreasing. On the face is a movable pointer. When this pointer is directed to zero it means that the surface being measured is a plane, or that the special part of the lens being measured is the axis of a cylinder. The left hand division, you will see, is marked plus and measures the plus lenses; the right hand division in a similar way indicates the minus lenses. The inventor tells me that in his design the order of plus and minus was reversed, but that the manufacturer, without his consent, changed it. That, however, is a detail of no practical importance, although in conformity with mathematical use of plus and minus it had been better the other way.

From the other diagram¹ you will see the mechanism by which the pointer is moved, from which, also, the reason will become plain why the divisions of the dial are not equal. In the upper part of the figure you will see three small rods. They do not need to be specially designated. They are ground to blunt points on the upper parts. The two outside rods are fixed, but can

be moved if it is desirable at any time to adjust the instrument. The middle rod is attached to a solid bar which slides up and down in a slot in the ground plate (A) of the instrument. In the figure this bar is marked B. To the bar is attached a knife-edged chain in contact with the short arm of the rack D. The fixed point of the rack is at E, and is made adjustable by the screw device, shown in the figure at F. At the lower part of the rack are the cogs which work the pinion to which the pointer is attached. The hair-spring is used to take up what is technically called "back lash," to prevent lost motion in the rack and pinion. I will add that whilst the instrument readily measures the curvature of the lens, the dial is so graduated as to show the focal lengths, being specially adjusted for lenses of crown glass; and if a variation is observed in a given lens it may be suspected that the lens is flint and not crown glass. The indices of refraction of pebbles correspond practically with that of crown glass.

It only remains for me to demonstrate the working of the instrument on a few lenses to show how rapidly and with what certainty it can be done.

ON INFECTIOUS DYSPEPSIA AND ITS RATIONAL TREATMENT BY THE ANTISEPTIC METHOD.

Read by invitation before the Mississippi Valley Medical Association at its Sixteenth Annual Meeting, Louisville, Ky., October 8, 1890.

BY FRANK WOODBURY, A.M., M.D.,

FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, HON. PROFESSOR OF CLINICAL MEDICINE IN THE MEDICO-CHIRURGICAL COLLEGE, ETC., ETC.

A cynical Frenchman declared that the treatment of consumption was "opium and lies;" and at times we are tempted to say that the treatment of dyspepsia is the same—minus the opium. If we confine our judgment to the numerous proprietary "sure cures for dyspepsia," now so widely advertised, this conclusion would probably be nearly correct. I hope, however, that the methods of rational medicine may so commend themselves to our favor as to escape condemnation to this category, especially when we may see our patients, by adopting them, cured safely, quickly and more or less pleasantly.

It is proper to state, at the outset, that our present consideration of the subject is limited to dyspepsia solely as related to the stomach; no reference is attempted, or intended to be made to intestinal indigestion, or to the so-called intestinal dyspepsia.

It must be very obvious to all that dyspepsia occupies a very important place in popular nosology; it is as familiar as household words. On the contrary, there is a strong disposition among many of our systematic writers on medicine to ignore the term dyspepsia, or simply to discuss it

¹ The drawing of this diagram having been mislaid, we are unable to reproduce it here.

as a synonym of indigestion. This may be due to the fact that the pathology of the disease, which Trousseau called a subject "vast and obscure," has hitherto been very little understood; on the principle that the proper way to treat a disease which we do not understand is to treat it with contempt. Most of our text-books disappoint the anxious inquirer by paying very little attention to dyspepsia, or merely mentioning it as a symptom, or as synonymous with gastric catarrh or simple indigestion. Some authorities, —Clifford Allbutt, for example—are skeptical of its very existence, and darkly hint that it serves as a convenient cloak for a host of sins of omission in the way of overlooked diagnosis of organic disease. I am willing to admit that many cases of gastric inflammation, gastric ulcer, even gastric cancer, may remain for a long time latent, or merely occasion some disturbance of digestion; but this only illustrates the well-known difficulty of diagnosis of disease affecting the viscera, and certainly is no proof that indigestion or dyspepsia may not exist where no organic affection is present. Time clears up the diagnosis of most stomach disorders, just as it does those of supposed ovarian cysts or of some uterine fibroids in young persons of appropriate sex.

It is true that indigestion, or laborious, slow and painful digestion, may be only a symptom; but, when this symptom is of constant recurrence, and seriously impairs the patient's capacity for work or his enjoyment of the amenities of life and effectually destroys his comfort and ease, substituting discomfort therefor, it is hard to convince him that it is not fully deserving of the title of disease,—by brevet at least. Does it not seem that habitual indigestion and suffering after partaking of food, in an individual, is, at least, something very much akin to disease? One of the Hippocratic aphorisms reads as follows: "Such constitutions as suffer quickly and strongly from errors in diet are weaker than others that do not; and a weak person is in a state very nearly approaching one in disease." Here is a definition of a dyspeptic, 2300 years old: *one with a weak constitution, who suffers quickly and strongly from errors in diet*. Unfortunately, the poor dyspeptic is surrounded by pit-falls which he only discovers by tumbling into them; he is forever finding out that he has committed errors in diet, and is eternally encountering new trials and committing more errors, until he is ready to exclaim, in his extremity: "Wretched man that I am! Who will deliver me from the body of this death?" It is a fact, and a very sad one, by no means unfamiliar to readers of the daily press, that the condition of the dyspeptic sometimes becomes so intolerable that his mind is temporarily unbalanced, and he seeks surcease from sorrow and suffering by suicide. Let no man judge him harshly for the dreadful deed:—

"What's done we partly may compute,
But know not what's resisted."

With reference to the pathology of dyspepsia, I would consider it at least as much entitled to recognition as a distinct disease, in the present unsettled condition of medical nomenclature, as consumption or chorea. Like them, it is characterized clinically by manifestations of nervous disorders; so that Cullen was not very far wrong in considering dyspepsia as a neurosis under the class *Adynamia*. Like pulmonary phthisis, also, its most marked symptoms are produced (I believe) by the absorption of the products of parasitic microorganisms. Just as Philip has shown that the symptoms of phthisis are due to the absorption of toxic products of bacilli tuberculosis, I think that many of the clinical manifestations of dyspepsia are caused by poisoning by ptomaines or leucomaines. For when bacteria and other microorganisms have been accidentally swallowed with the food, if they find the conditions favorable in the stomach, they will rapidly multiply there and make it a centre of infection. When this occurs, and symptoms of disorder appear, I think it permissible to follow the general rule and apply to it the term infectious dyspepsia. By this I do not imply that it is also contagious, in the ordinary sense, but merely that the morbid manifestations are directly connected with infection by microorganisms and their products.

Lauder Brunton has gone over this ground in his papers on "Indigestion as a Cause of Nervous Depression," and on "Poisons Formed from Food, and their Relation to Biliousness and Diarrhoea;" and Sir Andrew Clark has similarly traced the cause of anæmia and chlorosis in young girls to digestive disturbance, or what he terms *faecal intoxication*. We now accept, without reservation, Pasteur's demonstration that there can be no fermentation or putrefaction without the presence of microorganisms; and I think Lister's corollary, that they are also responsible for the occurrence in the living body of inflammation and suppuration, is also generally received and daily acted upon,—at least, by those of us who practice surgery. Therefore, when Abernethy bluntly said that "men eat so much that the food actually ferments in their stomachs," he went at once to the root of the matter, and indicated the true cause of the symptoms in many cases of dyspepsia. Leared has shown that heart-burn is due to the presence in the stomach of butyric acid,—a product of lactic fermentation; and nearly thirty years ago Milne Edwards declared, as the result of his study of acid dyspepsia, that "the phenomena of lactic and butyric fermentation, which are manifested in the digestive tube, may well depend upon the action of infusoria, which live and multiply in the interior of this canal,—a hypothesis which explains the production of two gases found here, viz., hydrogen and carbonic acid."

Of late years the science of bacteriology has made wonderful advance, and especially in the department of bacterial parasitism, or infection, and its relation to disease. It is known that certain microorganisms, under ordinary circumstances, are harmless to the human system; others possess virulence, and produce more or less disturbance of the bodily functions or give rise to the different varieties of specific diseases. Under normal conditions, microbes, principally harmless, constantly find their way into the air-passages and into the stomach, and, indeed, certain varieties are always found flourishing among the contents of this organ.

Abelous,¹ a recent investigator of this subject, found 16 species existing normally in his own stomach, of which 2 were micrococci, 13 bacilli, and 1 vibrio. (Of these the *sarcina ventriculi*, the *bacillus pyocyaneus*, *bacterium lactis aërogenes*, *bacillus subtilis*, *bacillus amylobacter*, *bacillus megabacterium*, and *vibrio rugula* had been recognized previously by other experimenters). The presence of saprogenic microbes in the stomach, therefore, being constant and not incompatible with health, it becomes necessary to inquire why fermentation or putrefaction of the food does not occur after every meal? In other words, how is practical antiseptis obtained by natural process? Three things are to be considered in this connection,—(1) the food, (2) the digestive fluids, and (3) the physical conditions attending the act of digestion. With regard to the food, we observe that effort is made to have it fresh and suitable for digestion; experience having shown that tainted food, or, as we commonly say, spoiled food, very promptly causes serious disorder, both of the digestive organs and the nervous system. The food is also, as a rule, required to be mainly of the kind that the individual is accustomed to eating, as unaccustomed food often produces disorder. The well-known antiseptic character of the digestive fluids is of great utility in preventing the development of microorganisms, but these vary, both in their quantity and quality under morbid conditions. The muscular contractions of the stomach, owing to deficient innervation, or to other causes, are often lacking in energy and efficiency, thus producing what has been called motor dyspepsia, and the movements may also be attended by pain.

With regard to the personal equation or digestive capacity of different individuals, we rarely give sufficient consideration in therapeutics to actual anatomical differences in stomachs. Some persons have stomachs many times larger than others, thus requiring more bulky food and less frequent feeding than the latter, and this difference exists even in early infancy.

As already stated, during healthy digestion

fermentation and putrefaction of the food do not occur; but let digestion be retarded, or let the supply of gastric juice be insufficient in quantity or deficient in its essential elements, or let certain germs be present in unusual quantity, and indigestion, sour stomach, and the usual symptoms attending painful and tardy digestion will be produced. On the contrary, in a case of habitual indigestion, or dyspepsia, if proper measures be taken to keep the pernicious activity of the microorganisms in check, at the same time securing by hygienic and tonic treatment a proper innervation of the stomach, and especially a sufficient supply of gastric juice of good quality, the nervous symptoms, both local and systemic, will at once be ameliorated, and by continuing this plan of treatment (which I have ventured to call the antiseptic method on account of its results), and the selection of a proper dietary, the dyspeptic may be restored, if not to perfect health and happiness, as least as near as he can hope to come to them in this world.

I cannot help digressing a little just here, to note the precautions that civilized man has been taught by experience to take, in order to prevent septic infection of the contents of his stomach. He cooks his food at a comparatively high temperature, and, generally, it is eaten at once, or means are taken to preserve it by refrigeration or hermetical sealing. In thickly-inhabited parts of the world it is the custom to boil the water used for drinking purposes, and, very commonly, some aromatic or slightly stimulating herb or berry is added to make it more palatable. In fact, coffee after roasting has also decided antiseptic effects, and its infusion markedly retards the development of microorganisms in the stomach. Tea exerts a similar action, though to a less degree, but it has the disadvantage of retarding the digestion of albuminoids. Chloride of sodium is a constant feature upon all of our tables, and, doubtless, is one of the great agents in permitting advance in civilization, as it helps digestion, and is a valuable antiseptic. Alcohol has this action also, but possesses the additional advantage of stimulating the nerves of the stomach, thus increasing the rate of its movements, and also the amount of the gastric juice. When used to assist digestion, alcoholic stimulants are considered by Ringer to be invaluable, when used medicinally and with discretion. In the treatment of weak digestion, I often find the judicious use of old Bourbon to be attended by the most happy effects. It is the most reliable form in which to administer stimulants, and is infinitely preferable to adulterated French wines for this purpose.

It might be mentioned here, with regard to the question of treatment, that many of the drugs of established reputation in relieving the symptoms of dyspepsia are also known to be antizymotics. For instance, we may enumerate the cinchona

¹ Recherches sur les Microbes de l'Estomac à l'Etat Normal et leur Actions sur les Substances Alimentaires. Paris, 1889.

salts (quinine is very prominent among bactericidal agents), hydrochloric acid, nitrate of silver, the volatile oils, strychnine, arsenic, the mercurials, iodine and carbolic acid, creasote, beta-naphthol, salicylic acid, salol, resorcin, charcoal, not forgetting alcohol, which is the basis and essential ingredient in the various elixirs, tinctures and bitters. The alkalies, particularly the bicarbonate of sodium, act indirectly as antiseptics, by changing the reaction of the fluid contents of the stomach and preventing the growth of those bacteria which flourish only in an acid medium.

A very prompt and efficient method of preventing the undue development of microorganisms in the stomach is by irrigation of its cavity with antiseptic solutions. Washing out the stomach, or lavage, is a very old method of relieving the symptoms or indigestion, and does not acquire special apparatus for its performance. All that is necessary is to swallow large quantities of water, or other detergent solution, and then make the stomach empty itself by the act of vomiting. This was in use among the ancient Romans, and probably is among the few therapeutic expedients coming down to us from primeval man. The treatment of dyspepsia by emetics is similar to it, though attended by more nausea and disturbance of the general system. The method, which Kussmaul introduced in 1867, is a great improvement upon either of these. He uses a soft œsophageal tube, attached to a stomach-pump, for the purpose of washing out the stomach, and surprising results are obtainable by adopting this treatment. I have used for the same purpose a long tube, to which a funnel is attached, with equally good results, in adults, the tube being introduced through the œsophagus until its extremity enters the stomach. The funnel is then held upright, and a pint or more of fluid poured through it into the stomach; by simply allowing the funnel to hang down the action is reverse, and the stomach is emptied by siphonage. This is repeated several times at each sitting, or until the water returns clear. This plan answers very well in adults, but the pump or aspirator is better for children. I do not wish to give a bibliography of this subject, but will simply refer to a recent paper (John Hopkins Hospital Bulletin for July, 1890), by my friend Dr. William D. Booker, of Baltimore, in which the results of nearly 200 cases of gastrointestinal disturbance in children treated by stomach-washing are given. He reports remarkably successful results, especially for the relief of vomiting due to indigestion, and in summer complaint. I could give some interesting cases occurring in my own practice among adults with confirmed dyspepsia (one of incipient insanity, apparently arrested by washing out the stomach a few times and appropriate general treatment), but I do not wish to extend this communication farther.

I would summarize as follows:—

Laborious, painful and imperfect digestion occurring habitually, when not symptomatic of other disease, constitutes dyspepsia; and when accompanied by fermentation of the contents of the stomach and general toxic symptoms, the result of microbial development, it may properly be called infectious dyspepsia.

The disorder is sufficiently prevalent, and gives rise to enough discomfort and actual suffering in its victim not only to deserve our serious consideration, but also to enlist our best therapeutic skill in their behalf. The excessive growth or microorganisms during digestion is favored by slow movements of the stomach and by defective quantity or quality of the gastric juice. Acid dyspepsia, or sour stomach, may be due to excessive secretion of hydrochloric acid (rarely), but is generally caused by lactic, acetic, or butyric fermentation, due to the presence of appropriate forms of bacteria in the stomach. The object of treatment of infectious dyspepsia is to prevent the excessive development of microorganisms during the digestion of food. This is sought to be accomplished by (1) the use of articles of diet which are not in a fermenting condition, nor readily fermentable; (2) by adopting such hygienic and tonic measures as will invigorate the bodily powers and especially bring the gastric juice up to its normal standard of quality and quantity, and increase the muscular power of the stomach; and (3) by local antiseptic treatment, including the administration of drugs which retard fermentation, and especially by lavage, or irrigation of the stomach, with weak disinfectant solutions, or simply recently-boiled water.

218 S. Sixteenth Street, Phila.

THE TREATMENT OF ACNE.

BY HENRY WM. BLANC, B.Sc., M.D.,

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When we consider what a common affection is acne, it is rather remarkable that so little attention is given to it by the general practitioner.

If a youth between the ages of thirteen and twenty-five years asks the advice of his family physician about a face broken out with pimples, he is not infrequently given a large amount of advice and a small amount of arsenic, and told that he will soon outgrow the disease, or *out-live* it, at any rate.

If a young girl is afflicted with the trouble she gets similar advice, but the arsenic is now mixed with a little iron, or some emmenagogue; and she, too, is sent on her way to await the predicted disappearance. But does this spontaneous cure come to confirm this advice?

In a few instances I have seen involution take place in about two or three years, leaving the skin red, rough and irritable; but in a large majority of cases the eruption remains as a constant annoyance and disfigurement to its unfortunate possessor, until its latent cause has become sufficiently aggravated to demand for itself, as a separate disease, a special form of treatment, when both affections improve together—the effect together with the cause.

Though acne is never severe enough to threaten life, nor even to produce pain to any marked extent, its common location upon the face is apt to be a source of great annoyance and embarrassment to the patient, not only from the redness and prominence of the pustules, but because of the pitting of the skin which not infrequently follows these when the disease remains long untreated.

Acne may be due to a variety of causes, but the commonest of these is indigestion. This word must be taken in its broadest sense as implying impeded function of some portion of the gastro-intestinal canal. It behooves the physician, then, who would treat this affection successfully, not only to search out the causes of indigestion directly located in the alimentary canal, but also to thoroughly inform himself of the condition of the liver, the blood and the reproductive organs, inasmuch as the function of the stomach and bowels may be directly impeded by poverty of the blood or torpidity of the liver, on the one hand, and, in a reflex way, by dysmenorrhœa, or irritation of the external genitals, on the other.

It has become my habit to lay down rigid rules of diet for acne patients, which must be strictly adhered to even in the mildest cases. These rules are framed with a view to increasing the alkalinity of the blood, and promoting daily evacuations of the bowels. A vegetable and fruit diet is recommended in some cases, meat being altogether interdicted, and in others a small quantity being allowed only once a day. Green vegetables should not be dressed with vinegar or mustard, and all salads and pickles are forbidden. Milk, and the alkaline mineral waters may be drunk at or between meals, but tea, coffee and other stimulants must not be taken. In case of weakness an occasional whisky toddy may be taken before meals; though it is not recommended. Nothing is to be eaten between meals, and nothing to be eaten just before retiring. It is needless to say that rich pastry, and other food containing fatty substances, nuts, etc., are not to be partaken of.

These rules will apply in nine cases out of ten. But occasionally we meet with people who cannot drink milk, or with whom fruit does more harm than good. Of course, a special diet must be planned for these particular cases.

The bowels must be made to move daily. To accomplish this an orange or an apple taken an

hour before breakfast, or the juice of a lemon mixed with a small quantity of water, will frequently be all that is necessary. But sometimes the habit of constipation is so strong that it requires something more active than the fruit acids to bring about the desired result. If the patient is weak and anæmic, or if the skin has a waxy look, and the sebaceous openings are relaxed (patulous) and inclined to form numerous comedones, it is well to give some remedy which would be a tonic to the system and at the same time have a laxative effect upon the bowels. I do not know of anything which will produce these two results better than the magnesium cum ferro mixture, which may be ordered as follows:

R—Magnesii sulphatis, ʒj;
Ferri sulphatis, gr. iij;
Acidi sulphuric. dil., ʒj;
Acquæ cinnamomi, ʒvj. ℞

S.—Tablespoonful in a little water two hours before breakfast.

The dose here given is usually enough to produce one action a day, but should it be insufficient another tablespoonful may be taken at bedtime.

Sometimes the iron is not indicated, or it may be more desirable to give a medicine which can be made up in pill form. For this purpose nothing is better than cascara sagrada. This is frequently administered as a fluid extract, but its disagreeable taste is against it as a medicine for constant use, and consequently I have fallen out of the habit of using it in solution, giving instead the following pill:

R—Ext. cascarae sagradae, ʒss;
Ext. hyosciami, gr. iv. ℞
Ft. pil. No. 20.

Sig.—One pill morning and evening.

This pill may be taken before or after meals, as the patient finds it most convenient, and serves the purpose of giving tone to the bowels, so that when stopped after two or three weeks of use the constipation which usually attends the stoppage of laxative medicines, is not apt to occur. The hyosciamus is added to this pill in order to prevent griping, but I have acquired the habit of prescribing it always with the cascara pill, for I believe it has a special action of its own in other forms of skin disease, such as erythema (urticaria) when attended by constipation, and in which I have given it with marked success.

The bowels being regulated, what are we to give as a tonic for the general condition of the system? Cod liver oil and iron are apt to be the first agents suggested to our minds, but if these are not given in their most digestible form it is best not to give them at all. Both of these are apt to upset the stomach, and in acne gastric digestion must be carefully guarded all the way through. Indispensable as cod liver oil is in many strumous cases, I think it can be dispensed

with by the majority of acne patients. If iron is to be used it should be in exceedingly small quantity—and as it is to be administered for some weeks, we can afford to give it in small doses—and I do not know of any preparations better than the phosphorus compounds. A number of these preparations now on the market have given very good results as stimulants to the mucous membrane of the stomach and as aids to digestion. They differ chiefly in the relative quantity of iron, quinine or strychnine which they contain. Horsford's Acid Phosphate is a tonic which has given me satisfaction when I knew that the stomach was at fault, and may be given in doses of a dessert-spoonful just before meals in a small quantity of water, and again just before the patient goes to bed. This is sometimes made into a lemonade with sugar, but I prefer to have it taken without being sweetened.

A valuable remedy in acne, particularly the pustular variety, is the sulphide of calcium. This is given in pill form, or as tablets in doses of one-tenth to one-fourth of a grain repeated every two hours. As nearly all druggists keep tablets or gelatine-coated pills of this drug, the patient may be instructed to procure these and carry them about in his pocket, taking them at intervals until six or seven are taken in a day. Not infrequently this drug acts like a charm and the formation of pustules rapidly diminishes under its administration, while at other times the action of the remedy is entirely negative. This negative action may be explained in many cases by the proneness of the drug to become stale, the *sulphate* having formed by oxidation, when, of course, the pills may be expected to be inert. It is probable, also, that to the impurity of the drug may be attributed the digestive disturbances it occasionally produces, for if this were not so it would be impossible to account for the fact that many persons with delicate stomachs can take the sulphide of calcium for weeks at a time.

The forms of acne due to disorder of menstrual flow, masturbation, and the like, are to be treated internally exactly as these troubles are usually treated when uncomplicated with this disease, and we will not pause here to consider methods familiar to every general practitioner. However, a word or two in reference to this subject may not be out of order. With acne that comes upon women arriving at the climacteric there is almost always an accompanying rosacea due to the same cause. This rosacea, as is well known, consists of a redness of the nose and frequently of the cheeks, forehead and chin, the result of dilatation of the superficial capillaries. These patients blush easily, and the skin becomes particularly red and irritable at the time the menstrual flow is to come on. The common complications of "heart-burn" and palpitation in cases of this sort, has suggested remedies which regu-

late the circulation, contract blood-vessels, and act as general stimulants; and when these are used the results are apt to prove satisfactory.

Apropos of acne due to masturbation, I have a patient at this moment—an octoroon boy, nineteen years old, who has been under my observation, off and on, for a year, and always gets relief from my treatment when he discontinues the sexual irritation. When first seen by me he was a masturbator, and on being told of its injurious effects he stopped the practice for a while, and greatly improved under local and constitutional treatment. Thinking himself cured, and being told by his companions that continence was injurious to a man's health, he plunged into another form of sexual excess—with women, and the acne came back on him in as bad a state as before. Several times he has reformed, and each time he has improved, during the past six months. Latterly I have ceased to treat him with drugs altogether, and am awaiting the result of a newly-formed resolution to discontinue bad habits.

For the external treatment of acne a variety of lotions and ointments have been suggested, though I propose to mention here only some of those that have proven satisfactory in my own hands. But before rehearsing any of these remedies too much stress cannot be laid upon the necessity for opening at regular intervals the comedones and pustules that constitute the disease. For this purpose the acne lancet and comedo-compressor are used. This process requires time and patience, for the patulous orifice of the comedo, as well as the pustular apex of the advanced lesion alike require the use of the lancet. Many patients have been led to believe, from one source or another, that the lesions are aggravated and that pitting is produced by the use of the lancet. Their minds should be disabused of this at the beginning of treatment, and the assurance given that if these lesions are left alone the chances of permanent disfigurement are much greater. For external use sulphur has given me better results than any other agent that I have applied to the face. This may be made into an astringent wash, and is particularly useful in acne rosacea, where the blood-vessels are dilated and the surface irritable. The best of all the washes known to me is the well known *lotio alba*, of which the following is the formula, slightly modified:

R—Potassii sulphidi,
Zinci oxidi,
Zinci sulphatis, āā ʒij;
Glycerinæ, ʒii;
Aquæ rosæ, q. s. ad. ʒiv. ℥

S.—Apply to skin after having thoroughly removed oily secretion.

The sensation which this produces is a puckering of the skin, accompanied by a feeling of dryness. Patients have complained to me that it made their skin feel wrinkled. The condition which accompanies these sensations is desirable,

but I find it better to alternate this action with a salve which acts more directly upon the horny layer, and which can be rubbed down into the comedones and open pustules. For this purpose I have devised the following combination, which is to be applied morning and evening after having thoroughly washed the face with hot water and the alcoholic soap lotion:¹

R—Sulphuris præcip., ʒiss;
Acidi salicylici, ʒj;
Ext. ergotæ fluidi, ʒij;
Lanolini, q. s. ad. ʒj. ℞

This prescription I use constantly, and have found it serviceable in all affections involving the sebaceous glands. The sulphur is here rendered more antiseptic by the salicylic acid which, in turn, softens the horny layer of the skin, thus permitting a freer action of the application. The ergot, besides acting locally upon the dilated capillaries causing them to contract, also from its fluid character, aids the lanolin in its penetrating powers. It being understood that the external treatment of acne is the treatment of sebaceous glands the function of which is disordered.

More severe than the method just recommended is Unna's ichthyol treatment. This substance (usually the sulpho-ichthyolate of ammonium) is dark brown in color with a pitch-like consistence, and has a strong penetrating odor, more or less disagreeable to the majority of patients. It is usually too stimulating to the skin in ointments of over fifty per cent., but combined with vaseline, in the proportion 30 per cent. of ichthyol and 4 per cent. salicylic acid, it may be expected to give good results in acne, provided that the pustules are opened in the usual way, and the proper remedies exhibited for the purpose of removing any ascertainable exciting cause. One of the worst cases of acne that I have ever treated was cured with the following ichthyol salve:

R—Ichthyol, ʒvj;
Acid. salicylic, ʒij.
Vaselini, q. s. ad. ʒij. ℞
S.—Apply to face night and morning.

In conclusion, it would be well to say a few words with reference to the care of the skin during the course of treatment, bearing in mind that acne is not cured either in a week or a month—usually several months elapse before the patient can be discharged cured—and sometimes a few cases, with obscure constitutional symptoms, will hang on till the beginning of another year. I once cured a case of acne of two years' standing in the short space of ten days, and the delight of my patient was only exceeded by the surprise of her adviser when he saw the result. This rapid cure has been a puzzle to me ever since. But we were referring to the care of the skin during the

usually prolonged period of treatment. This consists in keeping it free from all external irritants, such as the soot and dust of the atmosphere, and in constant washings, to be followed by frictions with a hard towel.

It is well to use some bland soap for washing, with a view to removing the oily secretion of the sebaceous glands, so abundant in this disease, and at the same time freeing the glands of a secretion which, by decomposing at their orifices, might excite them to inflammation. A good lotion, which will subserve this purpose, and which may be used by busy persons whose occupations will not permit them to use disfiguring applications on the face during their hours of work, is the following evaporating wash:

R—Acid. boracic, ʒij.
Glycerinæ, ʒij.
Spt. vini, ʒj.
Ether sulphuric., q. s. ad. ʒijj. ℞
S.—Apply to face during the day.

This may be allowed to dry upon the skin and left there without attracting attention.

If asked to sum up in a few words the proper plan of treatment for acne, I should be inclined to say that it consisted in *strong and constant antiseptics WITHOUT, and the correction of disordered function WITHIN.*

42 Baronne Street.

ADMINISTRATION OF MORPHINE BY THE NOSTRILS.

Delivered before the American Rhinological Association, Louisville, Ky., October, 1890.

BY CARL H. VON KLEIN, A.M., M.D.,
OF DAYTON, OHIO.

In the administration of morphine by the mouth, there is generally, besides an inprecipitate taste, a great deal of hacking and spitting; in many to such an extent that it produces an irritation of the throat, especially of the soft palate. If used repeatedly it excites the same irritation of the lips and tongue as in the use of opium, and has been known to blister the mouth. In persons not accustomed to the taste of morphia it produces nausea and vomiting.

Dr. Billroth¹ reports in the case of a lady who took small doses 0.007 gram (gr. 1-9), and even 0.003 gram (gr. 1-22), saw such anxiety, nausea, and vomiting, that although suffering intense pain, she refused to take the remedy again. Cases of the same nature have been reported by Laborde.

Wernick² has called attention to the occurrence of a paræsthesia of taste after the use of morphia.

As a rule where persons are found to dislike the taste of morphia, or where it is desired to have a rapid physiological action, the hyperdemic is

¹ This soap, called by Hebra the *spiritus saponis kalinus*, is made as follows: R—Saponis viridis, ʒiv. alcoholis diluti, ʒij. M. cola et adde spiritus lavandulæ, ʒj.; M. et ft. lotio. If too strong it may be mixed with water.

² Wiener Med. Wochenschr., 1868, p. 763.

³ Archiv. f. Psychiatrie, Bd. ii, p. 174.

resorted to; this, too, finds opposition on account of puncturing the skin and the danger of producing abscess.

The new method of administering morphia through the mucous membrane of the nose which I will now describe, has been thoroughly tested by me in over one hundred cases where the immediate physiological action of morphia was necessary. I have found it to be the most reliable, tasteless and prompt action than given by the mouth or hyperdemic. It requires much smaller doses than taken by the mouth, and no larger than when taken hyperdemically.

The manner of administering morphia through the olfactory canal is simply by snuffing it up the nasal chambers in the same manner and in the same way as snuff tobacco is used. You divide the dose intended in two equal parts, each part placed upon the end of the thumb and snuffed up into the nostrils. The membrane being very soft and delicate it instantly appears to absorb. I have tried it on myself on several occasions, and it seemed almost instantaneous absorption; no more than fifteen seconds after the introduction I have blown my nose and nothing could be found in the secretion. However, in poor qualities of morphia the drug will not absorb as readily.

In cases where the nasal chambers are incrustated and covered by dry secretion, the cavities should be cleansed before administering; care should be taken not to snuff up too strong to engulf in the throat. If the drug is of a poor quality it will produce sneezing, but the narcotic effect will be the same.

The administration I have now described you will find, besides the tasteless and rapid action, to retain the narcotic effect for a longer period than taken by either mouth or hyperdemic.

NERVE DEGENERATION IN CHRONIC ARSENIC, LEAD, AND ALCOHOLIC POISONING.

BY JOHN FERGUSON, M.A., M.D., L.R.C.P.,

DEMONSTRATOR OF ANATOMY, MEDICAL DEPARTMENT, UNIVERSITY
OF TORONTO, AND LECTURER ON NERVOUS DISEASES
SUMMER SESSION OF THE SAME.

The whole question of neuritis and nerve degeneration is one of very great importance; and all cases that throw light upon it are of value. The three following examples are of considerable interest in this respect. The first case, the detailed account of which was read before the Ontario Medical Association in 1887, is now given in a very condensed form.

The patient, a consumptive, had been taking large doses, m. 20 and 30, three times a day for a lengthy period, of liquor arsenicalis. She had been advised to do this by some one as a cure for consumption. She continued the use of the drug,

in spite of much gastro-intestinal irritation, and headache. At last severe pains began in the legs. These pains extended to other parts of the body, and were very intense. At this stage I saw her. There was evidence of neuritis. There was also paralysis of some muscular groups, particularly anterior tibial, permitting toe drop. Tested by galvanic and faradic currents, there was marked degenerative reaction. On the death of the patient the nerves and muscles in the most affected parts were submitted to examination. The degeneration in the nerves was pronounced in its nature; and there was an advanced state of muscular atrophic degeneration as well.

The other case was that of a man about 45 years of age, who had been employed in a lead works for many years. His principal work in the establishment was to run shot. In this work, large quantities of lead were melted and tempered, for the making of shot, by having a certain proportion of arsenic added when the lead was molten. As the arsenic was being added there would arise a volume of fumes; and this, of course, was inhaled freely. The person in question several times had lead colic. He suffered greatly with neuralgic pains in different parts of the body; but especially in the right side of the chest. These pains were no doubt due to neuritis. He had drop wrist. Finally, he died rather suddenly in the condition of acute imbecility and general paresis. The nerves and muscles of the most implicated regions were examined and found to have undergone a most extensive amount of degeneration. In the extensors of the forearm muscle fibre could hardly be recognized in some parts; while the nerves in some places were completely destroyed, in others only in a state of inflammation. There were the reactions of degeneration to the usual electric tests.

The third case is one of alcoholic neuritis. The patient was a well developed man, 39 years of age. He had been a very free beer drinker all his life. Latterly, he kept a hotel, and was in attendance at the bar nearly all the time; and constantly taking "nips" with those who were drinking. He began to complain of pains in his legs, anterior tibio-fibular region, which he thought were rheumatic. There was also some failure of eye-sight. I told him his trouble arose from his drinking and insisted upon abstinence from liquors of all kinds. This led to a change of physician for a time. He grew worse. Toe drop set in. Eyesight became more and more impaired. When I saw him again there were marked evidences of muscular atrophy and degeneration. He died in an attack of delirium tremens. In this case there was a combined condition of inflammation and degeneration of the nerves. The musculo-cutaneous and anterior tibial nerves were in an extreme state of degeneration. The musculo-spiral was also much affected.

The muscles supplied by these nerves were greatly wasted and essentially atrophied. Prior to death there were abundant evidences of degeneration by the electric examination of the affected regions.

THE CLINIC.

MYOMATA UTERI, AND SUPRA-VAGINAL, HYSTERECTOMY.

A Clinical Lecture delivered in the Medico-Chirurgical Hospital, Philadelphia.

BY E. E. MONTGOMERY, M.D.,
OF PHILADELPHIA.

Through the kindness of Dr. J. Bart. Webster, of Atlantic City, an alumnus of this college, it is my privilege to bring before you a patient with the following history:

Clara —, æt. 38 years, colored, was admitted to the hospital two days ago, suffering from abdominal distension. She had noticed an enlargement some four years ago, which has gradually increased since, until now it is a very serious burden. Her principal distress is from the weight and pressure. The growth has not been attended by any marked disturbance of the menstrual function. The general appearance of the patient is good, showing that her nutritive functions have not been influenced.

Inspecting the abdomen when the muscles are relaxed by ether, we see the distension is nodular and irregular. A large mass can be seen upon either side, the larger to the right. Palpation discloses that these nodules are hard and firm, while the whole mass is freely movable. By previous vaginal examination, a mass or nodule was found in the pelvis behind the uterus. The uterus is involved in the growth and cannot be separated from it. Without further examination, the majority of you are ready to pronounce it a case of uterine myomata. The hard firm growth, its association with, or involvement of the uterus, the absence of fluctuation, and the slow progress all confirm the diagnosis made.

These growths are made up of tissue analogous to that of the uterus, and have their origin in localized spots within its walls. Where the muscular tissue predominates, the tumor is soft, its growth rapid, and the line of demarkation ill defined. Usually, as a tumor increases in size, the connective tissue about becomes thickened, forming its capsule. These tumors may early become encapsulated and their growth arrested, after which enucleation is comparatively easy. They may exist singly, or the uterus may contain a large number, in the latter, the condition is known as multiple myomata. To the latter class belongs the case now under consideration.

It may be well to remember that these growths

are also designated according to their relative position in the uterus. All these growths originate in the walls of the organ, and as they increase in size, those nearest the mucous membrane are forced into the cavity, becoming what is known as submucous tumors, when such a tumor is attached by a large base we call it a sessile tumor, when by a small one, a polypus. The latter tumors may be extruded from the uterus and hang by a long pedicle.

If the growth is situated in the wall of the organ, equally distant from the peritoneal and mucous surfaces, it is designated an interstitial, or mural tumor; while a tumor extruded beneath the peritoneum is called a subperitoneal. To the latter class belongs the tumor we have under consideration.

These tumors vary in size from that of a pea to those weighing 80 and 100 pounds.

The symptoms of the disease, will depend much upon the size, and the situation of the growth. The intra-uterine and submucous, and those interstitial which project well into the cavity of the organ are likely to be accompanied by hæmorrhage and uterine colic. In every case of continuous or repeated hæmorrhage, occurring in women, during the period of active menstrual life, you should examine carefully to determine the presence of polypus, or submucous tumor. In the subperitoneal variety, hæmorrhage may be slight, or entirely absent. The principal symptoms in such case will arise from pressure. The influence of the tumor will depend upon its situation; thus a small tumor low down in the pelvis may cause much more suffering than a much larger one situated in the abdominal cavity. The period of active growth is during the menstrual life of the individual. Subsequent to menopause, the growth either remains quiescent, or diminishes in size.

In considering the operative treatment of a patient, near the climacteric, it is well to remember that the latter is usually delayed, owing to the turgescence of the organ produced by the presence of the growth.

What shall be our treatment in the case before us? We have the choice of medical, electrical, and surgical.

Medical Treatment.—A great variety of remedies have been lauded for their imagined efficacy in delaying the growth, or causing the absorption of these growths; but in estimating the value of any plan of treatment, it should be known that their progress is often capricious, the tumor decreasing or disappearing without any assignable cause.

The remedies which have been found the most effective, are the bromides, the ammonium chloride, calcium chloride, and the various oxytocics. The first named drugs have been given quite largely, but it must be confessed with doubtful

utility. The calcium chloride was recommended by Sir Jas. Y. Simpson, because of its power to produce calcareous deposits in the vessels and capsule of the tumor, but unfortunately its action could not be limited to the growth; the coats of the large vessels and valves of the heart were also affected. The most effective remedy, undoubtedly, is ergot. It may be given by the mouth, by the rectum, or hypodermically. The drug exerts its action in two ways; first, through its action upon the muscular coats of the arteries, second, by intensifying the contraction of the uterine fibre, thus favoring the pedunculation of the tumor, either beneath the peritoneum, or into the cavity of the uterus. In order that this treatment should be effective, there must still remain enough healthy muscular fibre to be stimulated, and so arranged as to exert its force upon the tumor. The number of tumors in this case leads me to fear that it would not be effective. Another, and more important objection to its use in this case is the element of time. The most that we could accomplish would be a slight reduction in the size of the growth, and treatment would need to be continued an indefinite time.

Electrical Treatment.—The observations of Apostoli, based upon accurate dosage of electricity and its judicious application, have demonstrated its marked beneficial effect. His observations have been confirmed by such careful and experienced men as Sir Spencer Wells and Mr. Keith. In cases of hæmorrhage, the application of the positive pole intra-uterine is very effective in controlling and arresting it.

You will ask why we do not use electricity in this case? I reply, for the reason that it would require some months of treatment before this patient would obtain much decrease in size; time which she can not afford, hence we are driven to resort to surgical measures.

Surgical Treatment.—Now we may have our choice of two procedures under this head, viz.: the removal of the appendages, or the supra-vaginal removal of the uterus. The first operation would be done with the purpose of establishing menopause artificially. We do not consider this operation serviceable here for several reasons: first, the removal of the appendages does not always bring about, at once, a cessation of menstruation; second, the tumor would still be left, and cause distress by its weight and pressure; third, the operation, in many cases, is more difficult than the removal of the tumor, and in some, from being spread out over the mass, can not be accomplished. We shall proceed, then, to the operation known as supra-vaginal hysterectomy.

As a preparation for the operation, we have the patient's bowels thoroughly evacuated by repeated doses of saline, the abdomen carefully washed with soap and water, and afterward with acid sublimate solution, devoting especial atten-

tion to the pubes and pit of the umbilicus. Having etherized the patient, we expose the abdomen and cover the body above and below with blankets, the exposed surface is surrounded with towels wrung out of an antiseptic solution. An incision is made in the median line, using probe-pointed scissors to complete the incision through the fascia and peritoneum. The incision extended from the umbilicus to within an inch of the pubis. The tumor was with some difficulty lifted up, and was held closely to the brim of the pelvis by the contracted broad ligaments. This formed so broad a stump that its ligation was not feasible. The finger was pushed through the base of one broad ligament close to the uterus, two large forceps applied to the ligament, which was cut between them. After the opposite ligament was treated in the same way the remainder of the uterus was surrounded with an elastic ligature and the tumor cut away. The broad ligaments were ligated with braided silk. The stump was transfixed with pins and a wire *serre nœud* applied, after which the elastic ligature was removed. The abdominal cavity was cleaned, the stump pressed down in the lower angle of the wound and the peritoneum stitched about it with catgut sutures. The entire wound was closed with chromatized catgut sutures. The dressing of the wound, after dusting with iodoform, was iodoform gauze and absorbent cotton. The stump was carefully isolated in dressing the wound. The duration of the operation from the entrance to the exit of the patient was one hour.

The patient will be placed in a warmed bed and surrounded with hot bottles to prevent shock. Neither food nor drink will be given by the mouth for the first few days. If she complains of thirst we will inject slowly into the bowel from one half to a pint of warm water. Nourishment will be given in the same manner. If she complains of severe pain, morphine will be given hypodermically, but we will endeavor to limit her to the one dose, as this drug, by locking up the secretions, limits the power of eliminating poisonous compounds, promoting the probability of septicæmia. Should there be any elevation of temperature, we will, at once, begin the administration of a saline, thus forcing the intestines to drain the peritoneum.

MEDICAL PROGRESS.

EXPERIMENTAL TUBERCULOSIS. —GRANCHER and MARTIN (*Le Bulletin Médical*), on November 19, 1889, deposited in the Academy of Medicine, Paris, a sealed paper, in which they claimed, by a mode of treatment, to have succeeded in preventing the evolution of experimental tuberculosis in the rabbit. The publicity given by Koch

of his results, has led them to publish their researches sooner than they wished. In their experiments they chose rabbits and injected the bacilli into the veins, as by this means constant lesions of the liver, spleen and lungs are produced, lesions which invariably prove refractory to local treatment. As the tuberculosis thus conferred is always fatal, we have a means of measuring the value of any method tending to confer immunity or to cure after infection.

They have always followed a uniform plan, a like quantity of a virulent culture of the tubercle bacilli being injected into the veins of two rabbits, the one to serve as a control animal—the weight of each animal being taken daily to guide in the application of the treatment. In the past two years they have experimented upon 42 rabbits, of whom 15 were control animals and 27 were treated in different series. The results generally conformed to the following series: December 31, 1889, seven rabbits received in the vein of the ear a like quantity of a virulent culture. The control animal died twenty-three days after inoculation; the rabbits treated lived 126, 176, 176, 184, 189 days respectively; the sixth one is still living 229 days after inoculation. Autopsy in these cases was almost negative, spleen small, liver healthy and free from bacilli; but in the perilobular spaces a few embryonal cells were found, showing a tubercular process in the healing stage.

They have obtained a diminution of the virulence of the bacilli by successive cultivations. The first of these series kills the rabbit, when injected intravenously, in from fifteen to thirty days. From this point the virulence successively diminishes to the tenth, but the last three cultures do not reproduce themselves and are without effect upon rabbits. The second and third are mortal, but after a varying time dependent upon the resistance of the animal. Variations are still more marked with cultures 4, 5 and 6. The first series of inoculations were made on August 27, 1889; five rabbits received in the ear vein one-half a Pravaz syringe full of culture No. 6. September 3 the same rabbits received culture No. 3, and again the same culture on September 12, September 26 culture No. 2, and at last, on October 15, culture 1. At this time three fresh rabbits were inoculated for control experiment. These latter died October 28, November 2, and November 5 respectively, with the classical lesions of experimental tuberculosis. Three of the vaccinated died in the same time and with the same lesions. Two survived until December 17 and January 7, 1890, respectively; they both presented mild tubercular lesions. This demonstrated conclusively the insufficiency of vaccination with the weak cultures 6, 3, 3, and 2. Very good results have been obtained by multiplying the vaccinal cultures and stopping with No. 2. In a series of nine rabbits, with two control animals,

inoculated with the deadly culture No 2, January 23, five of these animals are still alive seven months after infection. Immunity is not so conclusively shown in these cases, as the results of inoculation of control animals with culture No. 2 are by no means certain.

A last series was composed of eleven animals vaccinated with cultures 6, 5, 4, 3 and 2, from January 30 to March 25. • April 10 the vaccinated rabbits and two control animals received culture No. 1. The controls died twenty-three and thirty days after inoculation. The vaccinated have resisted still more, two dying June 16 and 26, two the 7th and 29th of July, four on the 4th, 7th and 9th of August. Three are still living four months after the most virulent inoculation.

In conclusion the writers think they have succeeded in giving the rabbits a prolonged resistance and in conferring an immunity for an undecided length of time.

THE OPERATIVE TREATMENT OF UTERINE MYOMA.—A. MARTIN closes an elaborate paper on the above subject (*Zeitschrift für Geburtshilfe und Gynakologie*, Band XX, Heft 1, 1890), with the following deductions:

1. Enucleation *per vaginam* should be confined to those cases in which there is a limited distension and beginning extrusion of the growth.
2. When a multinodular condition of the uterus exists, the organ still being movable in the pelvis, the size of the growth and that of the vagina corresponding, *extirpatio uteri vaginalis* is to be recommended in cases requiring operative interference.
3. In the case of large tumors which must be removed by laparotomy, enucleation should first be considered. In all instances where it is possible it is the duty of the surgeon to leave the ovaries, tubes, and as large a portion of the uterus as may be, for carrying on the female functions.
4. When it is not possible to save the uterus, total extirpation together with removal of the tumor by abdominal section is advisable, instead of partial removal—thereby doing away with all future discussion as to the intra- or extra-peritoneal treatment of the pedicle.

CHOLERA INFANTUM.—Many observations have been made with the aim of discovering a pathogenic organism in cholera infantum. Henoch came to the conclusion that we must at present regard the origin of this disease from microorganisms as merely a hypothesis. BAGINSKY (*Centralblatt für Klinische Medizin*, 1890, No. 36) has also made investigations which have led him to conclude that there is no specific organism which produces the disease. He states, however, that he found several varieties of microorganisms, which in his opinion together were the chief etiological factors. Jaksch states that the green

color so often seen in severe forms of this disease is due to the presence of a bacillus. Baginsky, in his paper referred to above, gives a very good account of the symptoms, sequelæ, and treatment of cholera infantum. He lays great stress on a peculiar eruption which often appears. It takes the form of roseola-like spots, which are found sometimes spread over the whole body, and sometimes only on the extremities. They disappear after about two days without desquamation, and are of no prognostic importance. Occasionally another form of exanthem is noticed, which may be regarded as an erythema. This also quickly disappears without unfavorable symptoms being foreshadowed by it. Amongst the sequelæ of cholera infantum Baginsky draws special attention to a condition which may be compared to that which occurs in Asiatic cholera, which this author designates "cholera typhoid." It is characterized by the following symptoms. The child becomes sleepy and apathetic; the temperature is high; there is great thirst; the stools are loose and contain pus and mucus in various proportions, and fibrinous threads are occasionally present. Pulmonary complications often supervene, such as bronchitis or broncho-pneumonia; pyæmic abscesses break out; the urine contains albumen, or there may be complete retention. The child lies with half-open eyes, and xerosis of the cornea often results. As regards treatment, the same author advises calomel, resorcin, and naphthalin, together with antiseptics, in the lighter cases; at the commencement of an attack, if the child be strong and well nourished, it is well to wash out the stomach. It is also important to place the little patient on the lowest diet possible, or even to withhold food altogether for a few hours. The latter precaution applies not only to artificial feeding but also the mother's milk. On the other hand, during this period it is advisable to administer brandy, sherry, tea, or coffee in iced water, and, if exhaustion be very pronounced, subcutaneous injections of ether. Gradually the child must be given weak gruel, milk thinned with iced water, etc. If complications occur, the various symptoms must be treated according to the usual methods; and the same remarks apply to sequelæ. Astringents should never be given; they are not only useless, but may even lead to evil results.—*Lancet*.

ACTINOMYCOSIS.—MATLAKOUSKI (*St. Petersburger Medicinische Wochenschrift*) reports a successful operation for removal of this condition in a man 46 years old. Six weeks before coming under observation the patient noticed a small, round, movable tumor under the angle of the jaw, which seemed to come without any special cause. The tumor grew, was not painful, and soon lost its sharp outline, seeming to infiltrate the surrounding tissue. Later a small abscess formed

that discharged a small amount of pus. Upon examination the hardened outlines of the infiltrated tissue could be distinctly felt. The tumor was completely extirpated, in the same way as a new growth in the same region would have been removed. Healing took place by granulation, and after two years and a half there was no return of the malady.

DANGER OF ERGOT AFTER PARTURITION.—MME. GACHES-SARRAUTE (*La Semaine Médicale*) in a paper before the French Academy for the Advancement of Science, stated that she would supplement the old rule that ergot should not be given before the child and after-birth had been expelled, by an additional one that ergot should not be given at all. Not even in those cases complicated by severe hæmorrhage. The foundation for these views lies, she thinks, in the fact that the uterus is never completely emptied in parturition—there always remain some shreds of membrane or clots. These according to her view, are a very grave source of infection, and a frequent cause for sub-involution and late infection recognized clinically in the several forms of metritis. Her own practice is to completely empty the uterus in all cases, and to be sure that this has been done she carries the hand into the uterus. The writer recognizes the danger of this practice as ordinarily performed, but says that with a thoroughly aseptic hand, with the nails carefully trimmed to avoid wounding the uterine tissue, it is attended with little risk. On the contrary, if the uterus is thoroughly emptied and washed out with sterilized water, hæmorrhage is immediately arrested and involution is a rapid process occupying but a few days.

She claims for these apparently heroic measures, almost complete freedom from the secondary accidents, now, unfortunately, too common.

CATHARTIC TREATMENT OF PERITONITIS.—LANPHEAR, of Kansas City (*Medical Review*, July 12, 1890) discusses the cathartic treatment of peritonitis and gives the history of a number of cases successfully treated. He claims that opium possesses, really, but little curative power over the inflammatory process; that it retains within the bowels irritating fæcal matter that can but increase the trouble; that by completely checking peristaltic movements it leads to the formation of adhesions; that it stops excretion and so prohibits the elimination of the poisonous products of inflammation; and that by benumbing the sensibility it gives the physician a feeling of (false) security which is undesirable. Upon the contrary, the administration of the saline cathartic has the power of arresting the disease if given in the stage of invasion; here the peritoneum is simply congested, or just taking on an inflammatory action—the pain is not very severe, the

abdomen is not greatly distended, the fever is not high; but the physician it called, recognizes the danger and immediately gives the saline. If it be the initial stage of a simple peritonitis, if it be the beginning of a puerperal peritonitis, or if it be the sthenic stage of a septic peritonitis, the indication for the cathartic is clear; in either instance the blood-vessels are turgid with blood—the circulation impeded; the taking away of a considerable amount of serum from the abdominal viscera must profoundly affect the peritoneal circulation and assist in restoring the normal state. Besides, the active peristaltic action prevents the formation of bands and adhesions if the inflammation goes on; and experience at the bedside demonstrates that as the inflamed surface is relieved from engorgement by the emptying of the intestinal vessels, the temperature and the pulse rapidly decline, while the pain disappears almost as speedily as under opium. If the disease has gone on to the second stage where the fever is high, the pain intense, the tympanites marked and the pulse rapid and wiry, cathartics are not so strongly indicated, though small doses of sulphate of magnesia and tincture of belladonna may often be given with advantage; here the danger is collapse, and as vital force must be conserved, violent purgation is not justifiable and opium must be given—not to check the peristalsis, nor to “put the bowels in splints,” but to deaden the pain in the many terminal nerves of the peritoneum, to sustain the heart and prevent shock. The bowel must be kept free from irritating faecal matter, by enemata if possible, by a good cathartic if necessary; tympanites must be controlled by turpentine, either internally or by stupes; and the strength must be maintained by milk, whisky, etc.

His conclusions are:

1. The saline treatment should be adopted early in simple, acute peritonitis.
2. Small doses of calomel may be given to mild purgation in cases seen after the disease is fully developed.
3. Cases which fail to be relieved by cathartic measures should receive early operative interference.
4. Whenever peritonitis has gone on to that stage where the formation of pus is known, or even suspected, to have taken place, abdominal section and drainage are imperatively indicated.
5. When the existence of tubercular peritonitis is diagnosed, or strongly suspected, operation (exploratory incision) is justifiable.
6. Opium is only indicated in the second stage of peritonitis, and then not because it “forms a splint” but because it relieves pain, sustains the heart and prevents shock—thus combatting the tendency to death.

A HEAVY BRAIN.—OBERSTEINER (*Centralblatt*

für Nervenhilfkunde und Psychiatrie) describes the brain of a man 53 years of age who recently died in the poor house of Vienna. The previous history of the individual was fairly well known; born in Vienna of Jewish parents, in excellent circumstances, he wasted a rich heritage and finally died a pauper. The brain weighed 2,190 grams, after making some allowance for some possible post-mortem inhibition, 2,028 grams. The microscopic examination showed no special alteration in the histological structure and the various convolutions had about their normal arrangement.

The author takes this opportunity to make some remarks on the weight of the brain in general. He dismisses as untrue the statements regarding the extraordinary weights assigned to the brains of Cromwell and Lord Byron. The only authentic instance in which a brain has weighed over 2,000 grams he assigns to that of Turgenjeffs, who died in Paris in 1883. The autopsy was made by Broardel, Ségond, Descond and Magnin, and the brain weighed 2,012 grams. He dismisses as unreliable the observation upon the brain of Rustan, who was found to have a brain weight of 2,222 grams.

Bischoff mentions the brain of a woman that weighed but 820 grams who was apparently not idiotic, but in whom insanity was given as the cause of death. J. Hess examined a brain in Obersteiner's laboratory that weighed but 788 grams. It belonged to a woman 67 years of age who lived in the poorhouse, and who must have manifested sufficient intelligence to have conducted herself properly, and attended to the ordinary affairs of life within the limited range of her experience. The microscopic examination of this interesting specimen showed vacuoles throughout the brain, due probably to old encephalitis.

TREATMENT OF POST PARTUM HÆMORRHAGE.

—DIRSKA (*Berliner Klinische Wochenschrift*, No. 8) recommends in post partum hæmorrhage that the uterus be firmly grasped by one hand, while with the other all clots are removed, and walnut-sized pieces of ice be conveyed to the uterine cavity and upper portion of the vagina. It is necessary that the uterus be compressed for at least fifteen minutes. The author has always succeeded in stilling post partum hæmorrhage by this method, and in thirty cases of placenta prævia centralis when it was applied, was so fortunate as to save the lives of all his patients.

POISONING BY BOILED CRAWFISHES.—DRS. ZORIN and MARLEKOFF, of Nikolaiev, report a series of cases of acute gastro-intestinal catarrh recently observed in which the disease had been undoubtedly caused by the ingestion of commercial boiled crawfishes. Some of the cases proved fatal.

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SATURDAY, OCTOBER 25, 1890.

THE FIELD OF OPERATIVE LABOR.

Conservative surgeons were formerly regarded as those whose training and inclination led them to adopt any other probable curative surgical methods in preference to operative procedures, unless the latter were imperatively demanded. They were not ready to suggest the employment of the knife as a radical measure at the very outset, if any other means of relief were attainable. It is a question whether such a description would be applicable to the conservative surgeon of the present day, who with different surroundings of his patient, and with precautions that were not formerly available, feels much more secure in assured results from the use of the knife. It was something creditable, only a few years since, and in the memory of even young practitioners, to be conservative in the treatment of injuries and surgical diseases of the abdomen and the brain; and he who would needlessly, as it was then considered, operate instead of palliating by any other possible or plausible method, would be regarded as a meddler, if not, in some instances, almost a murderer, should the result be unfavorable.

Since the introduction of the various rational aseptic and antiseptic auxiliaries to direct surgical art, and the more favorable prognosis which they assure, he who would fail to employ them or to accept the principles of personal cleanliness upon which they are based, or would hesitate to resort to the use of the knife in cases in which modern advancement has plainly shown its applicability as an almost certain means of relief to

suffering, would no longer be considered a conservative surgeon, but as a halting unprogressive and unenthusiastic companion in the ranks of a constantly advancing army of modern practitioners. To open the abdomen, except in extreme cases of necessity, was not long since regarded as almost a barbarity; but happily the limits of operative interference are now being clearly defined by the best surgeons, so that caution and tact are keeping pace with boldness and skilled manipulation. Conservative surgery has, therefore, advanced in its scope and field, being active and aggressive where it was formerly passive and non-interfering; but it exercises its watchful care and supervision over all the accessories which are now regarded as essential to the successful issue of every important, or even trivial, surgical operation.

While, however, the use of the knife has been greatly extended to the relief of injuries and morbid conditions in the highly sensitive and impenetrable visceral regions, we cannot be blind to the fact that in medical cases such direct radical surgical measures may be resorted to injudiciously, where medical treatment alone is indicated. The favorable reports which are so often made, in medical journals and in the proceedings of medical societies, of the results of operative interference in medical cases, or in those which are semi-surgical in their character, may sometimes mislead the inconsiderate and induce a practitioner who is ready, with open mouth, to swallow any novelty, to treat a case from the standpoint of the surgeon rather than from that of the medical attendant. This is a danger not to be overlooked, and the young practitioner should not be so much dazzled by the brilliancy of such reputed surgical triumphs as to be thrown off his guard in arriving at a decision as to the line of treatment best adapted to the case in hand. There is danger, too, that if some of these severe operations are proven by experience, under aseptic and antiseptic influences, to be but seldom fatal, they may come in time to be looked upon too lightly and to be approached too familiarly by those who may not recognize their difficulties, or who may fail to appreciate the narrowness of the boundary line between success and failure. Thoughtful surgeons everywhere are anxiously contemplating the field of operative labor, with apprehension that it may be invaded by the un-

skilled and the unscientific beyond whose reach the bold and brilliant surgery of the present day occupies a lofty station. All honor to those modern minds and hands that have so ennobled the science and the art!

CARE OF THE INSANE.

In the evolution of organic types we notice a constant reversion to preëxistent forms. So strong is this atavistic tendency that a six-toed ancestor will send through many generations his acquired deformity, and we shall find it appearing again and again even though it skip one or more generations. So in the development of political and social institutions, there is a constant tendency to revert to a primordial type, and the patriot cries out, "Eternal vigilance is the price of liberty."

The humane and scientific care of the insane has been achieved after a struggle extending over one hundred years, in which, more than once, the tide of superstition and ignorance threatened to overwhelm the small but heroic band battling for the rights of these unfortunates. One would suppose that this question had been definitely settled, but now and again the reversion type shows its deformed head. We refer especially to an article read by DR. J. M. DODSON before the Wisconsin State Medical Society. In this paper we have an indictment, strong in that personalities are avoided, against the county care of the insane that has reared itself upon a foundation of false economy, synonymous with neglect. How true this is, is shown by the report of one county receptacle in New York State that proudly boasts of a reduction of the *per capita* costs to \$1.06 per week. That such a sum cannot furnish proper food, supervision, care and medical attendance goes without saying.

Dr. Dodson points out the fact that chronicity and incurability are not necessarily convertible terms, and makes a stirring plea for enlightened medical supervision of the chronic insane. He closes with an appeal to the members of the State Society to aid in the erection of State institutions for insane, with separate provision for imbeciles and insane criminals.

THE French parliament contains 42 physicians, only one of whom belongs to the Conservative party. The remainder are either radicals or liberals.

FEMALE PHYSICIANS IN EARLIER TIMES.

In 1596, a license was granted in the city of Norwich, England, to DAME ADRIAN COLMAN, widow, late wife of DR. NICOLAS COLMAN. The license was given this lady to administer to women and children, on the grounds of her having been experienced in the art of physic during the lifetime of the said Nicolas. In 1560, the Bishop's court of Norwich licensed DAME CECILY BALDRYE to practice the art of chirurgery. One hundred years later, a dentist, ROBERT PURLAND, received a permit to practice from the Bishop of the same diocese. This is cited to show the scope of power of the ecclesiastics of those early times. It is not generally known that in the early Middle Ages much of the military surgery of that period fell into the hands of women, who were not unskilled in simple cures. In the old troubadour song about Aucassin and Nicolette, we are told that when the hero got his hurt, Nicolette looked him over and found his arm out of joint and "put it in again." In the feudal times it was the custom to educate the girls, belonging to the nobles, in practical matters pertaining to medicine and surgery, especially the healing of wounds. But by the time of the sixteenth century, the sphere of women, at least in the German army, had fallen off several points, from the dignity of the original treatment of the wounded, to a compound of nurse, camp-follower and something even less desirable, which is best expressed by the title of the official, who had charge of them, namely, "hurenwaibel," or whoresergeant. In camp, the sick and wounded were collected into a special hospital tent and nursed by these ladies. On long marches they were carried along in wagons, or left behind in villages or cities, under the care of a "spittelmeister."

EDITORIAL NOTES.

NEW YORK STATE MEDICAL ASSOCIATION.—The seventh annual session of this Association was held at the Mott Memorial Hall, New York, on October 22, 23 and 24. The occasion was in every way enjoyable, and helpful in sustaining the reputation of this young and vigorous body. There was a discussion on "Intra-Cranial Lesions," and another on points bearing upon "Prophylaxis in the Obstetrical Chamber." Were there no other attractions these would certainly

have repaid an attendance from any portion of the Union, while the other papers upon the programme were of present interest and practical value. This Association is a model organization, divided into Societies and Districts, responsible to the parent State Association, which in turn claims allegiance to the American Medical Association. With this first-named body, the system of delegates has been abandoned, each member immediately upon election becoming endowed with the privilege of representing his own views, and subject only in matters of legislative interest to the will of the majority. All elements of factional discord are thus sought to be eliminated, and so far has resulted in banding together a class of physicians who only needed a stimulus for the best of work.

CHOLERA INTELLIGENCE.—According to official returns from Spain, 1,814 fresh cases of cholera and 959 deaths occurred during the month of September, thus bringing the totals since the beginning of the epidemic up to 4,870 attacks with 2,516 deaths. There is but little fresh news as to the distribution of the disease in the Peninsula, but it is evident that the city of Valencia is still most severely attacked. At Massowah the epidemic is decreasing; indeed, on the 29th of last month it was regarded as having ceased. No fresh intelligence comes from Aleppo, but quarantine restrictions are maintained and renewed against arrivals from the Gulf of Alexandretta. From a report made to the Russian Government by a physician entrusted with a special mission to Persia, it would appear that cholera is tending to recede from the southern boundary of Russia, such extension as is taking place in that part of Asia being in the direction of Mesopotamia; and it is predicted that its movement is *via* Van and Bitlis to Mosul and Bagdad. Two rumors of cholera in England, one in the Port of Liverpool and one in the St. George's sanitary district, near Bristol, both turned out on inquiry to be mere attacks of so-called English cholera.

THE report of the Pennsylvania State Board of Health as to the number of registered medical practitioners in that State has just been issued. There are 8,318 practitioners, of whom 641 are of foreign birth, every nation, with the exception of Spain, being represented. The re-

port contains the names and residences of each practitioner, with the name of the college from which he graduated and the length of time he has been practicing.

IN MEMORIAM.—Resolutions on the death of Dr. T. B. Harvey, of Indianapolis:

The members of the Mississippi Valley Medical Association now assembled in Louisville, Ky., desire to extend to the bereaved family of our beloved Vice-President, Dr. T. B. Harvey, our heartfelt sympathy.

In his untimely death this Association has sustained an irreparable loss. Dr. Harvey was beloved by each and every member of this Association, in whose interest he labored with such untiring energy. A brother to the older and father to the younger members of his chosen profession, we can but think of him with tearful eyes and aching hearts.

And while we thus mourn the loss of this noble man, we sincerely sympathize with the grief stricken members of his family, and although knowing full well that no words from us can lessen their deep sorrow, we send them this message of condolence and sympathy.

Resolutions on the late Ex-President of the Mississippi Valley Medical Association, Dr. William H. Byford, of Chicago:

We, the members of the Mississippi Valley Medical Association, now assembled at Louisville, Ky., desire to extend our heartfelt sympathy to the bereaved family of our late Ex-President, Dr. Wm. H. Byford, who has, since our last meeting, been removed from our midst.

We desire to convey to his family expressions we feel at this grand man's untimely death. There has been taken from us a noble man to whom a worthy successor will not soon be found. This Association especially has lost a kind and good friend and brother, and we join with all others of our profession in mourning his untimely death.

F. C. WOODBURN, M.D.,

WM. PORTER, M.D.,

DUDLEY REYNOLDS, M.D.

October 9, 1890.

THE GROWTH OF HARMONY BETWEEN MEDICINE AND PHARMACY.—The *Western Druggist* has the following editorial comment on the desideratum of closer relations between physicians and pharmacists: "Now that the American Medical Association has established a department of pharmacy, it is probable that more intimate relations will soon be established between the various State Pharmaceutical and Medical Associations. As soon as this is accomplished a new field will be opened up for work of mutual value to both physicians and pharmacists. A number of the pharmacal associations have sent delegates to the medical conventions, and in a few instances the physicians have been represented at pharmacal

meetings. Members who are both physicians and pharmacists and feel a sympathy for both professions are in a position to make serviceable delegates and should be selected on that account." The incentives to harmony between these two honorable scientific callings are constantly increasing, for the standards in both are being constantly carried higher. There are men in both professions—whose minds are so thoroughly infused with the scientific spirit of the period—that they can meet as peers, no matter where or what the platform is on which they meet. Science is the leveller of minor distinctions as between individuals, and the time will doubtless come, if it has not already come, when cordial and comfortable delegate-relations may be realized between the bodies to which those individuals belong. Breadth of views and honest work must open many doors that have hitherto seemed to be closed, and yet as the good work of harmony goes on, the specialization of scientific work of the two professions must also go on; so that while on the one hand they are drawn together, on the other hand the enormously increasing demands upon each will tend to keep them in their own special spheres.

DR. MONTROSE ANDERSON PALLÉN, died in New York City, October 1, after a brief illness. He was the son of a physician and was born in Vicksburg, Miss., in 1836. He was graduated from the Academical Department of the University of the City of New York in 1853, and from its Medical Department in 1856. After studying in London, Paris, and Berlin hospitals, he began the practice of medicine in St. Louis. During the war he was a medical director in the Confederate Army, from which he was sent to Paris in 1864 to obtain medical and surgical supplies. Soon after his return he was captured, and he was held in New York on his parole till the end of the war. Dr. Pallén was appointed Professor of Gynecology in the New York University in 1874, and he held the position until his death.

OFFICIAL REPORT ON THE FIRST ELECTRICAL EXECUTION.—Dr. Carlos F. Macdonald, the State Commissioner in Lunacy, of New York, has made an official report to the Governor, in which he expresses a favorable view regarding the use of electricity as the capital punishment in the case of Kemmler. He holds that the first contact was

fatal and that the death was painless. In future executions, however, he would suggest certain changes in the apparatus. He would have the law so amended as to provide one single central execution plant, equipped with a specially designed dynamo capable of generating a 3,000-volt current, and that instruments for measuring the current be placed in the death-chamber and properly managed by capable men. Dr. Macdonald states that the efforts of interested parties to invest Kemmler's execution with "an air of repulsion, brutality and horror" will fail of their object and that, when all the facts in the case are rightly understood, there will be no doubt in unprejudiced minds that the first execution was a successful initiation of the new means of capital punishment.

MURDER OF AN ASYLUM PHYSICIAN.—Dr. George W. Lloyd, an assistant superintendent at the King's County Insane Asylum, Flatbush, New York, was shot and killed almost instantly, October 10, by an escaped lunatic, who had been at large some months and who had returned to the asylum, armed with two pistols, with the avowed purpose of murdering as many as possible of the officials who had been concerned in his former detention. He had no special antipathy against the slain physician, less in fact than against two or more others, but meeting Dr. Lloyd first, he shot him and sought to escape, without carrying out further his murderous designs. Dr. Lloyd was an able and promising young physician, whose early cutting off is peculiarly tragical and painful, and none the less so, if it be true, as is alleged, that the authorities did not exercise due vigilance in following up their escaped charges and were content to report the facts of the escapes, and to enter them up on their records as patients discharged. This sad event may prove a salutary lesson to our alienists in regard to the escape of dangerous inmates from their asylums.

THE percentage of graduates among the physicians in Illinois was only 48 per cent. before the registration law went into effect; now it is 91 per cent.

DR. WALTER RIVINGTON says that to improve the medical profession in Great Britain, it is necessary to diminish the overcrowding, and the too free use of alcohol.

TOPICS OF THE WEEK.

TIMELY PRECAUTIONS.

The *Pacific Medical Journal* states that the San Francisco Board of Health have discussed the existence of cholera in Yokohama, and by resolution have declared that city an infected port. The quarantine officers have been ordered to use extra vigilance in examining all vessels from the Orient, and most vessels with their cargoes, and the baggage of both passengers and crew are now disinfected. This is the only wise course to pursue. If the germs of cholera are landed on our shores they must come by the vessels from over the Pacific, and the San Francisco Board of Health with its quarantine officers must be held responsible. In this instance quarantine should be effective—should it, however, prove futile, the next measure to adopt, and which in truth should be enforced now, is to follow the advice of the State Board by placing our cities, towns, hamlets and individual premises in such a state of order and cleanliness that the disease can find no accumulated filth in which to incubate its germs.

SPECIALTIES AS THEY MAY BE.

Subdivision to extreme minuteness has been the modern tendency in pathology, in the description of morbid processes and of all departures from normal conditions. On account of the sublimation and refinement to which it has been subjected, that subject has been generally regarded as one which was not sufficiently attractive to become popular. The same tendency to subdivision has been apparent in the department of surgery, and to a certain extent this is unavoidable, because that important department necessarily requires a regional apportionment of its study and practice; but the result is that specialism is thus allowed to invade and appropriate to itself several distinct and separate fields.

While the general surgeon is improving and perfecting operative procedures upon all the important organs and cavities, the surgical specialist seems to be concentrating his skill upon regions bordering, in the two sexes, chiefly on the natural outlets, rectal and genito-urinary. While the value of their services in this direction must not be underrated, we trust that the time may be far distant when, with the present tendency to subdivision of surgical labor or of localities for special operations, it may become necessary to set apart organs, instead of regions, for special operative interference, and thus to still further increase the number of specialties.

And we are now reminded that we have more than once expressed the view, editorially, that it was not a happily chosen designation of one important and useful class of practitioners of a surgical specialty, that they should be denominated "Genito-urinary Surgeons." In what respect, we have inquired, are they, as individuals, more "genito-urinary" than any other surgeons, or, indeed, any other of their professional brethren? If membership in the "Association of Genito-urinary Surgeons" is not limited to the "male persuasion," would not the admission of the female element produce a confusion of terms

—for are not the latter quite as "genito-urinary" as the other sex, and would not the Association, so far as anatomical construction and physiological capabilities are concerned, be composed of two distinct classes of genito-urinary members?

But this is only a passing thought. What we wished to say, before we entered upon this diversion or divergence from our theme, was, that there is danger, in time, that the subdivision of specialties may become so minute that each organ of a series or apparatus—say the genito-urinary chain of organs—may become the central figure of a specialty. Is it possible that in those days we may have bladder surgeons, urethral surgeons, perhaps penal surgeons? Then, too, it is not beyond the range of possibilities that we shall have vaginal surgeons, who will call the intra-uterine surgeon into consultation should the disease under treatment invade the precincts allotted to that specialist? Judging from the rapid advances of specialism in the past, what may we not expect from it, in its various ramifications, in the not very distant future? —*College and Clinical Record.*

FERULA SUMBUL IN CHOLERA.

It is stated in one of the daily papers that several medical experts have been sent by the Russian Government to Asia Minor to test by experiment the treatment of cholera with ferula sumbul, a plant growing in Turkestan, and possessing antispasmodic properties. Musk root, as the root of this plant is called from its strong musky smell, has been used for a long time by the Russian physicians as a remedy in cholera, dysentery, and febrile diseases of a typhoid or adynamic type. Sumbul root is official in the British Pharmacopœia, and as obtained in this country is in circular pieces, consisting of transverse sections of the root, with a wrinkled epidermis of a light brown color. It is employed as a stimulant, like the aromatic oils in general. It specially resembles valerian and musk, and is used in the same class of cases as these drugs. It will be interesting to know definitely whether sumbul possesses any special property in the treatment of cholera different from that of the other aromatic stimulants in use at the present time.—*Lancet.*

SEPULTURE IN ITALY.

Italy claims, and with justice, to have led the movement by which cremation is being adopted throughout Europe as a means of disposing of the dead. The first crematorium was established on January 26, 1876, at Milan, and on December 31, 1888, there were in the peninsula twenty-one communes having crematoria in constant working; and other twenty-one communes in which crematoria were either in course of completion or in contemplation. After all, Italy is only returning to a usage which belonged to her classic period, but the circumstances that caused her to return to it do her little credit. In a highly interesting report, issued by the Government Statistical Office, on the "Condizioni Igieniche e Sanitarie dei Comuni del Regno," we read a frightful account of the mode of interment practiced within her borders, and even now but partially reformed. As recently as

1885, out of 8,258 communes only 7,864 had one or more cemeteries of their own, while 120 communes availed themselves of cemeteries constructed on the territory of a neighbor. In 274 the dead of the commune were interred in churches or receptacles hard by, and in 628 the only means of disposing of the corpses (of the poor, we presume) was to throw them into a common pit (*fossa communaria*). Nor was this all. Of these charnel pits, 258 were within the inhabited radius, and 40 were at less than the regulation distance from this radius—that is, 200 metres. In other words, the mode of interment practiced in war, and excused only on the ground of necessity, was the established, every-day custom in 628 Italian communes five years ago. No wonder that the resort to cremation meets with such ready acceptance throughout the peninsula. Concurrently with the introduction of the crematorium, however, which only in exceptional quarters is available for the poor, public agitation is to be maintained. And we are hence glad to state that both in this country and elsewhere preparations are being made, by way both of improved sanitation and by the provision of means of isolation, to meet any imported infection. In France there is an evident determination to insist on the strict enforcement of the regulations as to notifying residence by persons who are allowed to pass the frontier from Spain, and several who have failed to comply with the rules as to this have been both fined and imprisoned. *Lancet*.

ALARMING FATALITY.

The Secretary of the Health Department of Yokohama recently reported that for the four days from August 29 to September 1, inclusive, there were sixty-two cases of cholera with fifty-one deaths. From the beginning of the epidemic the whole number of cases had been three hundred and eighty-five of which two hundred and seventy-nine died. The number of cases reported is not surprisingly large, but the death-rate is alarmingly high, indicating either wretched unsanitary conditions, unskillful treatment, or a very malignant type of the disease. It is probable that all these influences have to do with the high mortality, but more than likely the controlling one is the lack of popular sanitation.—*Pacific Med. Journal*.

UNIFORM NOMENCLATURE IN ANATOMY.

The establishment of a uniform nomenclature in anatomy, which was taken in hand by German anatomists about a year ago, has now become an international affair; and the committee appointed for the purpose, which has hitherto consisted exclusively of Germans, now numbers three foreign members—namely, Leboucq of Geneva, Cunningham of Edinburgh, and Romiti of Pisa. The expenses of the task are to be borne by the learned corporations of Germany, because the Anatomical Society, which began it, does not possess the necessary funds. The Prussian, Bavarian and Saxon Academies of Science have contributed 1,500 marks (nearly £75) each, the Academy of Vienna 1,000 guildens (about £85), and the Anatomical Society 1,000 marks (nearly £50). The completion of the work will be entrusted to a commission,

presided over by Professor von K  lliker of W  rzburg. The preliminary work is to be done by an anatomist of special qualifications, including the necessary philological attainments.—*Lancet*.

THE STUDY OF OPHTHALMOLOGY IN HUNGARY.

In consequence of the alarming increase of granular ophthalmia in the south of Hungary, the Minister of the Interior has arranged that courses of instruction on the treatment of this affection shall be given to medical practitioners in different centres. These will last a fortnight. The first course, which is now just completed, was given in the Eye Hospital at Maria-Theresiopol. Other courses will be given both there and at Szegedin. Practitioners attending these courses will receive a Government allowance for their traveling and other expenses.

THE QUESTION OF SHOCK DURING OPERATIONS UNDER ANÆSTHETICS.

A correspondent, referring to recent notices of deaths under chloroform, draws attention to the fact that it is expressly stated that in one case deceased was not deeply under when the operation was commenced and completed; whilst in the other, death occurred before the patient was completely anæsthetized. Many observers have noticed what they regarded as reflex syncope during imperfect anæsthesia, and Dr. Lauder Brunton, we believe, both in his lectures and in his "Pharmacology," laid down that imperfect anæsthesia rendered the patient peculiarly liable to cardiac failure through afference of sensory impressions conveyed from cutaneous or visceral nerves. It is certainly a commonly recognized phenomenon that tying the spermatic cord, handling the intestines and dragging upon intra-abdominal viscera produce, even under chloroform, not only marked variations in the pulse, but also variations in the rhythm of respiration. During the experiments made by the recent Hyderabad Commission, it will be remembered that no such interference with the heart's action appeared to occur in dogs, at least as far as the Commission were able to reproduce in the lower animals the more complete conditions of the experiment as presented by human beings undergoing an operation under chloroform. In settling this and kindred questions, we shall probably have to recognize as a factor the difference arising from the greater or lesser elaboration of the nervous system in the animals, human or otherwise, under investigation.—*Lancet*.

THE MEDICAL DEPARTMENT OF THE BRAZILIAN ARMY.

The medical department of the Brazilian Army is being reorganized. The officers and their ranks are as follows: 1 inspector-general (general), 3 first-class surgeons (colonels), 9 second-class surgeons (lieutenant-colonels), 27 third-class surgeons (majors), 85 fourth-class surgeons (captains), and 75 assistant surgeons (lieutenants). The pharmaceutical officers are: 1 first-class pharmacist (lieutenant-colonel), 2 second-class pharmacists (majors), 8 third-class pharmacists (captains), 32 fourth-class pharmacists (lieutenants), and 44 assistant pharmacists (sub-lieutenants).

PRACTICAL NOTES.

SALIPYRIN.

Prof. Gutmann (*Deutsche med. Woch.*), gives an account of a series of experiments which he has made with salipyrin in the Morabit Hospital, Berlin. Salipyrin is a combination of 57.7 parts of salicylic acid and 42.3 parts of antipyrin— $C_{10}H_{11}N_2O_2$. It is a white powder without smell, of slightly acidular taste, easily dissolved in alcohol, but not in water. Professor Gutmann's therapeutic experiments gave the following results: 1. Salipyrin lowers the temperature in fever. In cases of high continuous fever, a first dose of 2 grams, and four succeeding 1-gram doses at intervals of an hour, proved most successful, and reduced the temperature by about $1\frac{1}{2}^{\circ}$ to 2° C. The lowest temperature is reached in about three to four hours, then a rise follows, until nearly the original height is reached in four to five hours. Perspiration, more or less profuse, usually accompanies the fall of temperature. In common with all other antifebrile remedies salipyrin has a more powerful effect in cases of less resistant intermittent fevers. 2. Salipyrin is as beneficial in cases of acute rheumatic fever as salicylic acid (and its preparations) and antipyrin; but it is equally inefficient in preventing relapse. The quantity prescribed *pro die* was usually 6 grams, distributed over six doses given every two hours. 3. Salipyrin is effective in cases of chronic rheumatism of the joints, and rheumatic sciatica. 4. Salipyrin was found to have no disagreeable secondary effects, even where patients took 6 grams daily for a fortnight or longer. In one case only an eruption over the whole body was observed, which disappeared after three or four days. The color of the urine is not affected by salipyrin. Taking the results of his experiments together (which experiments extended over more than 2,000 grams) Prof. Gutmann comes to conclusions that can scarcely be called highly encouraging. He finds that salipyrin may be used for the same therapeutic purposes as antipyrin and salicylic acid, but that where an antifebrile effect is intended the dose of salipyrin must be double that of antipyrin.—*Brit. Med. Journ.*

MILK AND TYPHOID FEVER.

Dr. Vincent, physician to the Geneva Board of Health, has just published a careful report on the typhoid epidemic which raged in that city last spring, particularly in the Quartier des Paquis. He succeeded in tracing the outbreak to the milk with which the people in general, and the inhabitants of that quarter especially, were supplied. The most culpably negligent and untidy system

of cleansing the milk cans prevailed; indeed, in one extensive dairy he saw a milkman spitting on his hand in order to lubricate them for the scouring process to which he presently subjected the inside of those receptacles. Another source of the mischief was found in the carelessness with which the watering of the milk was practised—any water, pure or impure, being reckoned suitable. He strenuously urges on all who wish to escape the risk of contracting typhoid to boil their milk, and to see it done themselves. Milk sold as already boiled had not, in many cases, according to his experience, been properly boiled at all. The most perfunctory methods of boiling he found in constant practice. The moment the milk began to stir in the boiler and to bubble a little it was regarded as boiling and taken off the fire! Even had the boiling-point been adequately reached, he insists that the milk should still be kept on the fire for some minutes, if it is to be made perfectly innocuous. On the present system he thinks the microbes it is sought to destroy have every chance of surviving and of propagating their kind to increased activity.—*Lancet.*

USE OF ALKALIES IN DYSPEPSIA.

Germain Sée, in an article published in the *Semaine Médicale*, says that alkalies frequently fail to do good in dyspepsia, owing to improper methods of administration. He recommends that 45 to 60 grains sodium bicarbonate, dissolved in warm water, be given at the time of the greatest acidity, which is generally two or three hours after meals. Smaller doses do not sufficiently neutralize the acid, while larger ones may do harm by leaving the stomach contents alkaline, the object being to keep the gastric juice at its normal acidity. In dyspepsia, with insufficient secretion of hydrochloric acid, such as is met with in anæmia and neurasthenia, alkalies in small doses should be given half an hour before meals. It has been experimentally shown that this increases the amount of acid secreted. General hygienic and dietetic treatment should not be neglected.

QUININE AND PREGNANCY.

Merz (*Bulletin Méd. de l'Algérie*, January and February, 1890) concludes that, by setting up uterine contraction, quinine may cause abortion during the first three months of pregnancy. During the last three months that drug hardly ever provokes labor. The action of quinine during the middle months is uncertain; it certainly appears to grow less noxious as pregnancy advances. From the above conclusions it is evident that quinine ought to be avoided during early pregnancy, unless there be dangerous symptoms due to paludism.

SOCIETY PROCEEDINGS.

New York Neurological Society.

Stated Meeting, October 7, 1890.

THE PRESIDENT, L. C. GRAY, M.D., IN THE CHAIR.

TUBERCULOUS MENINGITIS.

DR. W. B. PRITCHARD presented the brain of a patient who had died from this cause. When first seen by the speaker the man was suffering from obstinate insomnia and headache. A few days subsequently the thermometer had shown some elevation of temperature, but this had never exceeded 103° at any time until shortly before death. The mental disturbances were very marked from the beginning. There was complete loss of memory, right-sided ptosis, difficulty and finally loss of speech, and the rapid development of symptoms of complete bulbar paralysis. The apparent immediate cause of death was the involvement of the vagus. There was decided right hemi-paresis. A very offensive purulent discharge from the nose was persistent, which continued until death. The autopsy had revealed over the right parietal bone a cavity about the size of a silver dime, the necrosis being presumably tuberculous in character. Over the patient's right eye there was a linear scar with a depressed fracture, but no apparent affection of the brain from this cause. At the base of the brain there was found a thick, tenacious material. The medulla, pons, crura and cranial nerves were involved, and the dura was covered along the convexity of both hemispheres with what was presumed to be masses of tuberculous deposit.

CAN WE DIAGNOSE HYPERÆMIA OR ANÆMIA OF THE CORD AND BRAIN?

DR. WILLIAM A. HAMMOND read a paper with this title. The writer had for many years been familiar with a group of symptoms which from their etiology and general characteristics were indicative of cerebral disturbance. Some twenty-five years ago, after considerable observation and many experiments performed upon living animals and the human subject, he had come to the conclusion that they were the result of an increased amount of blood circulating in the brain. The theory which the writer had advanced was, that natural sleep was due to a comparative anæmic condition of the brain, normal wakefulness to an abnormal quantity of intra-cranial blood. Persistent insomnia was the necessary accompaniment of the pathognomonic symptom of the affection in question. Without wakefulness then, there was no cerebral hyperæmia, with cerebral hyperæmia there was always wakefulness. If this symptom was associated with pain in the head, heat, and feeling of distension, vertigo and

hallucination, and was increased by the recumbent posture, and drugs which increased the circulation in the brain, there could be no doubt of the diagnosis of cerebral congestion in such a case. The writer had made many experiments with ergot and was convinced of its efficacy in diminishing the quantity of intra-cranial blood. In conclusion he said that if a patient came to him suffering from insomnia, pain in the head, vertigo, hallucinations, suffusion of the face, cephalic heat, and other striking symptoms of perhaps less special importance, and when he found the symptoms disappear under the influence of remedies, such as the bromides, ergot, ice and douches of cold water to the nape of the neck, cups in the same locality, usual blood-letting, or spontaneous hæmorrhage, position, and other means calculated to diminish the amount of intra-cranial blood, he did not see how an escape was possible from the deduction that the patient was suffering from cerebral hyperæmia.

DR. M. A. STARR said that while he did not wish to be understood as representing those who opposed Dr. Hammond's views, still his convictions at present were those expressed by Dr. Gray in his paper read recently before the Society. The symptoms which had been explained by the existence or assumed existence of cerebral hyperæmia were many of those symptoms which could be produced by other causes; such, for example, as wakefulness, which was often noticed in individuals when very much exhausted. In puerperal women who had suffered severe hæmorrhage. He had also certainly observed it in patients who were anæmic. Therefore to say that wakefulness necessarily indicated an hyperæmic brain was to advance a theory which was hardly tenable. Certainly hyperæmia of the brain might under certain conditions be diagnosed, but it was a very open question whether this could be done when only wakefulness was present. As to the question of drugs, they had been very much surprised to hear it stated by Dr. A. H. Smith and Dr. Peabody, at a meeting of the Practitioners' Society last winter, that those gentlemen had been treating cases of supposed hyperæmia of the brain with nitroglycerine and nitrite of amyl. These drugs, which were supposed to increase the supply of blood to the brain, were being given upon the hypothesis that they dilated the entire arterial system of the body, and the brain would therefore be relieved to a certain extent of blood. The reasoning at least appeared sound. The speaker thought it impossible to base a diagnosis upon any individual symptom.

DR. J. LEONARD CORNING thought this was not scientific reasoning. The truth might probably be more nearly arrived at by careful induction. If a man came complaining of headache, having a congested face, with a pulse of high tension, whose symptoms could be promptly re-

lieved by pressure upon the carotids, the jugulars, or bandaging of the legs, might such a patient be assumed as suffering from congestion or anæmia of the brain? The speaker thought congestion. Suppose quinine or alcohol should be given to such a patient and it was found that the symptoms were aggravated, it would be certainly concluded that the trouble was congestion.

THE PRESIDENT said that of course Dr. Hammond spoke with authority, this they were all prepared to admit. The fact that he was able to do so had much to do with the acceptance of his conclusions without criticism. Still no dictum in relation to a scientific point could be allowed to stand on personal authority alone. The conclusions must bear the force of investigation and be supported by fact. Dr. Hammond must not consider the discussion as having the least personal bearing, but as merely the expression of a general desire to elucidate the problem as far as possible. Dr. Hammond had stated the symptoms of cerebral congestion as being sleeplessness, with a certain feeling of compression or oppression about the head and a flushing of the face.

DR. HAMMOND here suggested that he had said these symptoms were increased by the dependent posture, or by anything which would increase the circulation.

DR. GRAY accepted the correction and went on to enumerate the conditions in which these symptoms might be found. For instance, insomnia was common enough in mental diseases and worry, melancholia, overwork, constipation, and in many conditions in which there was nothing to show that there existed any hyperæmia of the brain. In the early stages of intra-cranial syphilis there was a condition somewhat of the nature of hyperæmia. But then in Bright's disease, in which there was hyperæmia and congestion, there existed a condition of stupor. If the list of causes of insomnia were gone through, it would be possible to find a certain train of symptoms which would lead to the assumption of existing anæmia in some, and hyperæmia in others. Experiments had recently been made on the brains of animals, the report of which differed from those of other recorders, as to the point made that the brain rose or increased in volume during the waking period. It was an open question whether this was not due to cellular action producing an increase of blood. As to the association of sleeplessness with the recumbent posture, of course the extended observations of the author of the paper were deserving of due consideration, but so also were the more limited observations of the speaker in this respect, and he had not been able to verify the association. The question before them was not as to the existence of cerebral hyperæmia or anæmia, but as to whether it could be clinically diagnosticated. Flushed face might be dependent upon chorea, general paresis or injury to the brain. It was

impossible to say whether the symptom was brought on by hyperæmia alone. The feeling of oppression and sense of fulness in the head was found associated with errors of refraction, insufficiency of the ocular muscles, changes of climate, errors of diet, etc. To assume that in all those conditions there was hyperæmia of the brain was assuming a good deal, and more than could be proved. It was a point which had not been demonstrated by any pathologist, as to whether there could exist by itself an increased amount of blood in the cellular tissue or other finer structures of the brain without causing disease of the surrounding parts. It was strange that Dr. Hammond, after five months' preparation of the subject, had cited no autopsies in confirmation of his theory.

DR. C. L. DANA said he thought it was now generally agreed that there was such a condition as cerebral hyperæmia, and that it could be recognized in its acute forms. Such a state might be produced by drugs, congestive neuroses, trauma, etc. The question was and is, what was the condition at the base of that functional disorder which had gone by the name of cerebral neurasthenia? whether its initial stage was that of hyperæmia or the hyperæmia was a secondary process. An acute and chronic hyperæmia of the brain were conditions admitted to exist, but it was preferable to say functional cerebral neuroses or psychoses, where the hyperæmia was a secondary process, and that seemed the inevitable conclusion to those who watched these cases. Many patients among the neurasthenics showed symptoms of congestion of the brain, others of this class did not in any way present the symptoms of the classic type of cerebral hyperæmia, but showed the condition so shaded down that it was necessary to set aside all the symptoms generally described. There was something at the back of the hyperæmia. The hyperæmia of the brain was secondary to some disorder of the vaso-motor nerves, or to some functional condition involving the whole nervous system. As to insomnia and cerebral hyperæmia, that question was obsolete. To state that sleep was produced by anæmia and wakefulness by the return of the normal amount of blood to the head was, the speaker thought, in the light of modern neurological studies, a theory which could be described as unworthy further investigation.

DR. HAMMOND thought that his points had been unanswered in the arguments. When Dr. Dana said that the neurologists of to-day ignored the theory of the physiological changes during sleep, a theory which the speaker might claim as his own, he thought Dr. Dana in error. He would remind them that he stated that headache presented innumerable causes for its existence, and it was only when he found it with flushed face, and vertigo, and when it was increased by the de-

pendent position of the head, that the diagnosis was certain. Then he knew his patient had hyperæmia of the brain, all the neurologists in the world to the contrary.

THE SENSATION OF ITCHING.

DR. E. B. BRONSON read a paper on this subject. Notwithstanding the fact that the special senses in their present state were so far removed in respect to the knowledge they yielded to consciousness from common sensations, there doubtless was a period when the distinction did not exist. Their differentiation had been the result of gradual and long continued processes of evolution. There could be little question that the sensory organs to which the several senses owed their special attributes had all originally developed from simple nerve endings that gave but the vaguest intimations of external objects. In this evolution the impelling force had been derived from the two grand principles of life, known as the instinct of self-preservation and the instinct of reproduction. There still remained to the skin and mucous orifices a variety of sensations, others more specialized, including a special sense with perceptive faculties, and finally the most important representative of the reproductive instinct, the aphrodisiac sense. The only sense with which the skin was endowed, that could be called perceptive, and that was worthy of comparison with seeing, hearing, smelling and tasting, was the sense of pselaphesia. In included the sense of contact which was seen in its most primitive form; its most important element was the pressure sense, while the temperature and muscular senses were more or less auxiliaries. Common sensation was represented in the integument in its highest positive aspect, by the voluptuous sensations, in its lowest negative aspect by pain. Returning to the question, what relation to the sensory organs of the skin and to their sensations, did the sensation of itching bear? The author believed that there was sufficient evidence to locate the essential seat of pruritus in the epidermis. From elaborate research the author has drawn the following conclusions: 1. That there was a sense of contact independent of the sense of contact; 2. That this sense of contact was the sense disturbed in pruritus; 3. That it primarily concerned simple nerve endings in the epidermis; 4. That the disturbance in pruritus was of the nature of a dysæsthesia, due to the accumulated, or obstructed nerve excitation with imperfect conduction of the generated force into correlated nervous energy; 5. That scratching relieved itching by directing the excitation into freer channels of sensation sometimes, substituting for the pruritus either painful or voluptuous sensations; 6. That the voluptuous sensation might attend pruritus was a manifestation of a generalized aphrodisiac sense, representing a

phase of common sensation that had its source in the sense of contact.

DR. L. D. BULKLEY considered Dr. Bronson's paper one of the most scholarly he had ever listened to. He then referred to some studies he had made as to the reflex character of itching. For instance, if the itching sensation were on the finger of the right hand irritation or pinching of that finger would cause a reflex sensation in the neighborhood of the scapula of the same side. He had only found one or two instances in which it was transferred to the opposite side.

DR. STARR asked whether it was ever thought that itching was a symptom of central nervous disease. Patients with locomotor ataxia were said to be frequently troubled with itching around the arms, scrotum, and perineum. He had never seen a case confirming this.

DR. B. SACHS had never seen it in organic nervous disease, but in functional disorders, such as crural neuralgia he had known the itching to be more obtrusive than the pain. It was a frequent condition of profound anæmia and often observed in hysterical women, and in cases of hystero-epilepsy.

Philadelphia County Medical Society.

Stated Meeting, September 10, 1890.

THE VICE-PRESIDENT, JOHN B. ROBERTS, M.D.,
IN THE CHAIR.

DR. BENJAMIN T. SHIMWELL read a paper on
A NEW METHOD OF DELIVERING THE FŒTAL
HEAD.

Nature's manner of delivering the foetal head has been followed by obstetricians from time immemorial; recognizing the fact that the occiput is born under the symphysis pubis in normal labor. The face and chin stretch the perineal body, then force their way out, requiring an especial amount of care to prevent tearing of this tissue. The extent of injury to the pelvic floor is not properly appreciated; if the superficial tissue of the perineum is safe the attendant congratulates himself on his possible skill; or if aware of deeper injury, feels grateful that no apparent injury is shown to the watchful eyes of the nurse or patient's friends.

Thus do thousands get out of the confinement-bed ruined in health, carrying into the future injuries that must of necessity bring ill-results. Various plans have been suggested to support and accommodate the perineal body to the oncoming head.

It is strange how often the anatomical construction of the perineum is overlooked, and considered merely as a space-filler. It is by this that so much injury is done. The gynecologist's specialty lives by these results.

These are the reasons, hastened probably by experience gained in the above manner, that have induced me to write this paper. The theory that will be advanced, backed by my application of it in a great number of cases, is evidently new; if not, it has not come to my knowledge by reading or otherwise. The advantage of this method is the saving of the pelvic floor from injury, either superficial or deep. No attempt is made to show expedition, but a modification of the ordinary method of labor changing the direction of the impinging force.

Naegelé says that 70 out of every 100 vertex presentations are in the first position, the other 30 are occiput to right and posterior. The remaining positions are exceedingly rare.

When the head presents in the first position the body of the child must not be overlooked. The back of the child must present to the front and left, the chest to the back and right; therefore at right angles with the vertex presentation of the head at the superior strait. The important point in this theory is the rotation of the head to the symphysis pubis. The manner of the rotation of the head is mooted. Pajot claims that the shoulders participate in the rotation, but contradicts himself when he further says: "That it is above all the shape of the child's head which decides the character of the movement;" also, "that the occiput will, therefore, be carried forward less on account of the direction of the forces which impel it, than because of the necessity for accommodation of the cephalic surfaces to the pelvic surfaces." All writers admit that after expulsion of the head occurs restitution takes place, that in a case of first position, after the head is delivered, the head turns with its occiput to the left thigh—that is, in the direction that the head presents at the superior strait; this is an untwisting of the neck.

Gerdy claims that this is "an external expression of a movement of the shoulders within the pelvis, by which the biacromial diameter passes from the transverse to the antero-posterior diameter, the head following the internal rotation." The folly of this assertion is on its surface. The head is free and the neck and body are constricted by the vagina and uterus, and if rotation does take place, can we overlook the anatomical relation and action of the atlas vertebræ? Would not the weight of the head allow of the rotation internal without its external manifestation?

Penrose (Hirst, vol. i, p. 571) says: "While the head has rotated, the body of the child, still in the cavity of the uterus, has been tightly grasped by the firmly contracting walls of the uterus, and has not participated in the movements of the head; hence the shoulders are still oblique at the superior strait, consequently the neck of the child is twisted." The latter theory, according to my experience, is the true one. The

fact of the anatomical construction of the cervical vertebræ of the child cannot be overlooked. This arrangement allows of a rotation of one-fourth of its circumference to take place without injury to the spinal cord. Therefore, if Pajot's theory of the accommodation of the cephalic surfaces to the pelvic surfaces, rather than the application of the force, is true, then it can be seen that rotation of the head is possible without the shoulders. Then, again, the head is not free to wobble around the pelvis when it has reached such a condition of flexion, neither is the neck a rigid body depending on the shoulders for its position. If the theory of shoulder rotation is so, then nature's method is superfluous; for why should the biacromial diameter be changed from its oblique position, which is nearer the antero-posterior diameter, to the transverse, then rotate back again beyond its former position to the antero-posterior?

Playfair believes in partial rotation.

Believing, then, that the shoulders still maintain their oblique position through all the stages of the delivery of the head, what occurs when rotation brings the occiput directly antero-posterior? This has been accomplished by the rotation mentioned of the atlas on the axis vertebræ to one-fourth of its circumference; this having occurred, the delivery of the head takes place, then immediately external rotation or restitution occurs, that is, the neck untwists.

The outlet of the female pelvis is four inches antero-posterior and transverse. The antero-posterior is possibly increased a half-inch by extension of the coccyx. These measurements are decreased by the soft tissues; this is more marked in the antero-posterior by the rectum and perineal body. As the head in the last act of delivery begins to extend, we have presenting the cervico-frontal diameter, which is four inches; this has to pass through a space that is but four inches, possibly four and a half inches, lessened by the perineal body, which is at this stage excessively stretched and attenuated. As the safety of the perineum is an exceedingly important matter, it occurred to me that this might be accomplished by lessening the size of the impinging body and transferring the extending head into another direction. It is the nose and chin that rupture the pelvic floor, therefore if the direction of this force can be changed to some other point than the junction of the levator ani muscle, it can be easily seen how injury to this muscle can be prevented.

When the labor has reached this stage, I place the woman across the bed on her back, knees well drawn up, then compel her to breathe with her mouth wide open to prevent bearing down. As the head presents in the oblique direction and to reach the antero-posterior diameter it rotates, twisting the neck, the first step in the method is to reestablish the direction of the first impinge-

ment; this is not done until the cervico-frontal diameter is reached; *this must be complete*, then forcing the head into extreme flexion by grasping the presenting occiput by the hand (in non-instrumental labors), I begin my rotation; the first step is to untwist the neck; this accomplished, the head presents cervico-frontal to the left anterior. I then take advantage of the same anatomical construction of the cervical vertebræ that allows of the normal rotation, and rotate one-fourth in the opposite direction, that is, to the left. The cervico-frontal is then transverse, the neck lying on the labia of the left side, the forehead beginning to engage the soft tissues of the right labia. What is now presenting to the antero-posterior diameter, or, what is more important, to the perineum? The biparietal diameter, which measures three and one-half inches, therefore less tension on the perineum. The possibility of delivering the head in the transverse diameter has been questioned. The articulation of the head to the spinal column is wisely arranged; if no other object than birth was intended, it has well served its purpose. The diameters of the extending face are those of a right-angle triangle, the hypotenuse of which is four inches, the perpendicular three inches, the base two and four-fifths inches. The mechanical advantage of this is apparent. If the measurements had been those of a triangle, the impossibility of delivery is easily seen, the head could not be born as long as the perineum existed. The sweep of the extending head would be the same at the chin as at the forehead, and the perineum would be torn in every case and in every succeeding labor; but the measurements are those of a right-angle triangle, and of a necessity the chin must recede when complete extension takes place, so when extension is made in the transverse diameter of the inferior strait the chin does not impinge on the ramus of the ischium.

Having got the head into this position, I begin the last stage of the delivery of the head. The head has been all this time in extreme flexion, then extension is performed, the soft tissues of the labia push aside, and nose follows on forehead, chin on nose; delivery is complete, and the pelvic floor is safe. The head then untwists to its normal position.

DR. E. E. MONTGOMERY: I think that the members of the Society are greatly indebted to Dr. Shimwell for the graphic presentation of this method of dealing with the delivery of the head and effort to save the perineum. This certainly is a violation of that old principal which has been handed down the ages, that "meddlesome midwifery is bad." When we consider that all progress in obstetrics and every step in advancement has been in violation of this principle, this thought may not be considered an objection to

this procedure, which certainly seems to be one which should be serviceable. But, not having had experience myself, I am unable to say more than these few words in commendation of it.

DR. J. M. BALDY: It seems to me that the remarks of Dr. Montgomery in regard to meddlesome midwifery are true as regards pathological processes, but not as regards physiological processes. Certain it is that in almost everything in which we have attempted to interfere with physiological processes, we have found that they have been carried on a great deal better by Nature herself than by any so-called improvement that we have made on her. If Nature had meant that the head should be delivered in the transverse diameter of the outlet, she would have given us some indication of such desire. On the contrary, she has shown us very clearly and distinctly that the head was to be delivered in the antero-posterior diameter. It is probable that the head can be delivered in the transverse diameter, as Dr. Shimwell has pointed out, if all the measurements are of average size; but all of us know perfectly well that it is the exceptional head that we come across, and not the typical head. Many of the heads are large, and the higher we get in the stage of civilization the larger the head. The normal head may go through, but I doubt not that Dr. Shimwell will run across many cases that he will not be able to deliver in the transverse diameter. Unless the head will pass easily, we have here no room for extension of the outlet. It is a fixed quantity bound by bony walls—the ramus of the ischium on both sides—and there can be no distension. On the contrary, in the natural methods of delivery, we have free room for extension taking place through the perineal body and the soft part of the lower part of the pelvis. Now, it may be that there is danger to the levator ani muscles from over-distension, but at the same time I conceive, and it has been my experience, that the danger to these muscles is greater in proportion to the amount of interference we give to the perineum. In other words, we have here a hard body starting from a given point and progressing at a certain angle to a certain point at which it meets a plane of resistance, that plane of resistance being the soft parts of the pelvic floor, and, if you will, principally the levator ani muscles. There is a well-known physical law, that any body moving in a given direction and meeting with an obstacle, will be deflected at a certain angle. We have this occurring in delivery of the head. The head comes down and meets a resistance, which, although not a fixed resistance, is sufficient to cause deflection in the line of least resistance. This line of least resistance is the opening of the vulva. If resistance is given to the head at that point, the head is prevented from bulging through the vulvar orifice, and the *vis a tergo* being still active,

must be spent at some place, and that place is at the point of contact of the head with the pelvic floor. Taking the head, which is bulging the perineum and presenting at the vulva, we hold it back by pressure on the perineum, or by some other method; then we are going to have the greater part of the *vis a tergo* exerted at this one point. These soft tissues of the pelvic floor are capable of yielding to a certain point, and when they come to that point, they are going to give, and there will be a tear of the levator ani muscles and of the other tissues involved. This is where, I believe, the vast majority of tears of the perineum come in. All teachers teach that the head should be held back in some way or other, so that the vulvar orifice is not allowed to expand, and the head protrude, as Nature intended; and by this misapplied force we bring about the accident we are trying to avoid. I have found in the cases in which I allowed Nature to take her course almost entirely, keeping the fingers from the head and perineum, excepting to make slight pressure and lift the head up against the pubic arch, that they have done better and I have had fewer tears, and those that have taken place have been of a minor degree as compared with those where I tried to prevent injury by supporting the perineum. Any support of the perineum whatever is pernicious. I believe that all the teachers and all the books are at fault in that respect. Nature did not mean to have the head held back and have the whole force spent on one part, when we have the elasticity of all the soft parts well anchored, so as to yield and to give room for the head to pass. Supporting the perineum prevents the proper stretching of these tissues, and prevents any good they may do in bulging the perineum and forcing the vulvar orifice open.

DR. SHIMWELL: I am exceedingly sorry that some of my friends who have used this method successfully have not spoken. Dr. Baldy has raised the objection that a large head could not be born transversely, but the same objection applies to the antero-posterior position as well. He overlooks the fact demonstrated by the mathematical figure, that we gain, as the chin is delivered, a fraction over $1\frac{1}{4}$ inches. The head is born without impinging on the soft tissues of the pelvis.

I have tried this method successfully for a year and a half, both in primiparæ and in multiparæ. I have used it both in cases terminated without instruments and in those where the forceps have been required on account of loss of tone or from malformation on the part of the head or of the pelvic outlet.

In regard to Nature—Nature is not always a good worker. If so, why should we have a disproportion between the head and the pelvis? The outlet should be made equal to the head. With regard to the increase in the size of the head with

advancing civilization, I know that; but is the pelvis unchanged? Is it not rather lessened? Has it not changed its size and shape?

The points advanced are, I think, no argument against the method. It is a safe method; it is an easy method; and the delivery is accomplished with perfect safety to the child and to the mother.

Stated Meeting, September 24, 1890.

THE VICE-PRESIDENT IN THE CHAIR.

DR. CHARLES B. PENROSE read a paper on
THE TREATMENT OF HÆMORRHOIDS BY EXCISION.

My object in presenting this paper is to urge the more general use of Whitehead's operation of excision in the treatment of certain cases of hæmorrhoids.

In 1887 Mr. Whitehead, of Manchester, reported¹ three hundred consecutive cases of hæmorrhoids which had been successfully treated by the method of excision and suture. His operation is performed in the following manner:

1. The patient is placed on a table in the lithotomy position, with the hips well elevated.
2. The anal sphincters are then thoroughly paralyzed by digital stretching.
3. The mucous membrane of the rectum is divided at its junction with the skin around the entire circumference of the bowel.
4. The mucous membrane, with the attached hæmorrhoids, is dissected from the submucous tissue, and the cuff or cylinder thus formed is dragged below the skin margin.
5. The mucous membrane above the hæmorrhoids is then divided transversely, thus removing the pile-bearing area, and the operation is completed by suturing the upper margin of the severed membrane to the free margin of the skin.

The advantages claimed by Whitehead for this method of treatment are based on pathological and on surgical reasons. He considers that the internal hæmorrhoids, which are generally regarded as localized distinct tumors, amenable to individual treatment, are, as a matter of fact, component parts of a diseased condition of the entire plexus of veins surrounding the lower rectum, each venous radicle being similarly, if not equally affected by an initial cause, constitutional or mechanical.

The operation of excision is the only one which removes this whole diseased area. It is, therefore, demanded for this pathological reason. It is, in addition, surgically more perfect than any other method of treatment, because it provides for the readjustment of healthy tissues with the object of securing primary union and rapid convalescence. It does not leave the sluggish ulcer of the cautery, nor is it attended with the pain and slow convalescence of the ligature.

¹ British Medical Journal, February 6, 1887.

My experience with this operation is limited to ten selected cases. Only those cases were selected in which there existed a complete circle of hæmorrhoidal tumors surrounding the lower margin of the rectum, since for such cases Whitehead's treatment of excision seems to be most particularly adapted.

The details of the operation are simple and easy to execute. In dividing the mucous membrane from the skin it is best to begin at the posterior margin of the anus in order to prevent the blood from obscuring the field of operation. No skin should be sacrificed, even though there appear to be redundant tags around the margin of the anus. The skin always retracts somewhat and the tags shrivel and disappear before firm union has taken place. Failure to observe this rule may result in subsequent serious trouble. Kelsey² reports the case of a woman who had been subjected to a so-called Whitehead operation and who presented herself to him with a complete circle of excoriated mucous membrane, extending from one inch outside the anus. It is probable that in this case the operator had sacrificed too much skin.

On the other hand, the upper section of the mucous membrane should be made in the same horizontal plane throughout, in order to prevent subsequent ectropion ani.

The dissection of the mucous membrane from the underlying tissue is exceedingly easy except in some cases of old—or long standing—piles. The attachment of submucous tissue is very loose, and separation can be effected with the finger or with the handle of the scalpel. It is not always possible to dissect the piles completely from the underlying structures, as they may involve not only the mucous but the submucous tissues, and in such cases it is necessary to cut partly through the piles until the healthy mucous membrane above is reached. Repeated attacks of inflammation, of course, render closer the adhesion of the pile area to the underlying structures. In one of my own cases, where the piles had existed for forty years, and had frequently been inflamed, the adhesions to the two sphincters were so close that a few muscular fibres were cut away during the removal.

The amount of blood lost during the operation is surprisingly small. Whitehead states that he has often operated on severe cases and not found it necessary to twist a single vessel. In five of my cases no hæmostasis was necessary. Bleeding is avoided by adhering closely to the mucous membrane in the dissection, as the larger arterioles lie beneath the submucous tissue. The arterial bleeding occurs in those cases of old piles which have been subjected to previous operation or to attacks of inflammation, and in which dilatation of the rectal and anal arteries has taken

place secondary to dilatation of the hæmorrhoidal veins. The bleeding from the upper divided edge of the mucous membrane can be reduced to a minimum by following Whitehead's method of inserting the sutures as each portion is divided, or by adopting Marcy's plan of introducing a circle of shoemaker stitches of catgut around the mucous membrane above the piles before cutting the mass away.

Whitehead's advice is in all cases to remove the complete cylinder of mucous membrane, whether or not the whole of this area appears to be diseased. He gives this advice for the reason which I have already stated, that he considers the individual piles as but part of a general pathological condition, involving all the lower hæmorrhoidal veins of the rectum.

Whether we accept this pathological view or not, it is best to follow this plan, and to make a complete circular division of the mucous membrane, as by this method the best surgical results are obtained, and ectropion ani prevented. I have seen a case in which only one-half of the circumference of the mucous membrane of the rectum was removed, and a few hours after the operation an œdematous swelling formed in the other half, which has now resulted in a hæmorrhoidal tumor almost as annoying as the one for which the operation was performed.

In attaching the mucous membrane to the skin, Whitehead uses the interrupted silk suture. He never removes the sutures, but allows them to ulcerate through—a process which is very easily accomplished. In my own cases I have used the continuous catgut suture.

The treatment of these cases after operation is very simple. It is rarely necessary to use opium or the catheter. An opium and belladonna suppository introduced immediately after the operation is in most cases all that is required. The bowels can be moved in from twenty-four hours to four days, and with very little pain. Absence of pain after Whitehead's operation is due to the thorough paralysis of the sphincters, and to the fact that no source of irritation is left beyond that of a clean linear incision, united without tension and without strangulation of tissue.

A glance at the histories of my own cases shows that they were all cases of aggravated hæmorrhoids, in which the piles covered the whole circumference of the lower part of the rectum. In all the cases the disease had existed for many years, and two had been subjected to previous operation by the ligature.

In only one case was there anything like free bleeding during the operation.

In all the cases a suppository of one-half grain of extract of opium and one-half grain of extract of belladonna was introduced immediately after the operation, and this was all the opium required except in three cases, in which one-

² New York Medical Journal, October 5, 1889.

sixth grain of morphine was subsequently administered.

The catheter was used in only three cases, and in these for a period not longer than twenty-four hours. The length of time that the case is confined to bed depends to a great degree upon the social standing and the disposition of the patient. In my case it varied from two to ten days. Every case should be able to sit up in four or five days, and to resume work in ten days or two weeks.

The bowels were opened without pain in from twenty-four hours to four days after operation.

No complications of any kind followed these operations. Union takes place quickly, and generally one dressing, taken off when the bowels are moved, is all that is necessary. In no case was there incontinence from paralysis of the sphincters, or any tendency to stricture, from contraction of the scar.

Since the publication of Whitehead's paper his method of operating has been tested by many surgeons. The operation cannot be criticised on surgical grounds, as it is certainly the most perfect plan of treatment, surgically speaking, which has been proposed.

The immediate removal of the tumors, the coaptation of healthy tissues, and primary union, are substituted for slow strangulation by the ligature, or removal by the cautery and healing by granulation.

The applicability, or the necessity, of this operation in all cases of hæmorrhoids, is, however, open to criticism. If we accept Whitehead's views in regard to the pathology of piles, and believe that the whole venous plexus surrounding the anus and the lower end of the rectum, is in a pathological condition in every case of hæmorrhoids, even though there may be present only one or two isolated tumors; then, of course, the complete removal of this area is indicated.

But, that this view is not true is proved by the thousands of cases which have been permanently cured by the ligature and the clamp. The method, however, is indicated in all cases of aggravated hæmorrhoids where the vascular tumors cover the whole or the greater part of the circumference of the bowel. In such cases the operation presents no great difficulties. Statistics show that it is at least as safe as operation by the ligature or the clamp, and it is certainly followed by a more rapid convalescence, and much less pain and discomfort.

DR. W. D. GREEN: I have had the pleasure of witnessing only a small number of Whitehead's operations, but I fully agree, and I think that those who have tried the operation will fully agree with Dr. Penrose, that the method of excising through the whole circumference of the bowel, the pile-bearing mucous membrane, and drawing down upon the upper segment and then attach-

ing this to the lower segment without including the skin, has the advantages, first, of removing all possibilities of the return of the trouble; and, secondly, as Dr. Penrose has stated, in making a clear, clean, linear incision around the circumference of the bowel. Nearly all of us have seen the immense amount of suffering which the older operations by means of the clamp and ligatures, and even the cautery, have entailed. In the cases of the new operation which I have seen, recovery has been rapid and complete. In one case, that of a woman well advanced in life, upon the day after operation, when I got to the house, I found her comfortably seated in a rocking-chair. The physician who had the case in charge before the operation had given her freely of some medicine to open the bowels, and on the morning after the operation, without any pain and without any tenesmus, she had a large, well-formed motion. In the old method, in which for days the physician was called upon to administer opium, either by suppository or hypodermically, in large amounts, and in which the patient and the physician both looked forward with dread to the time—five or six, or ten days after the operation—when the bowels were to be opened, is by this method entirely obviated.

I have seen, in the few cases which I have watched, no pocketing or trouble about the line of incision. The two freshly cut surfaces unite very quickly—very much more so, it seems to me, than in mucous surfaces elsewhere. Even when the bowels were moved within twenty-four or thirty-six hours, I was surprised to find that there was no trouble.

It strikes me that the continued suture has advantages over the interrupted. Being introduced and made fast at one point, and then carried out and in around the circumference of the bowel, if catgut be used, at the time when union usually occurs the suture is probably dissolved and passes away without any trouble; or, if silk be used, by simply introducing the scissors and cutting close to the knot and giving an easy pull, the whole suture is removed without any pain or bleeding.

I must confess that the operation presents to me by far the best method of removing the pile-bearing membrane when it exists and involves one-half or more than one-half the membrane around the circumference of the bowel.

(To be continued.)

AMYLENE HYDRATE IN EPILEPSY.

Nache agrees with Wildermuth as to the value of amylene hydrate in epilepsy, even where bromides have failed, and where the attacks are not only very frequent but severe. He uses a 10 per cent. solution of the drug, and gives from one to two tablespoonfuls a day (from thirty to ninety grains). Nache also believes that *petit mal* and nocturnal epilepsy are benefited by the drug.

DOMESTIC CORRESPONDENCE.

A General Index for Medical Journals.

To the Editor.—A physician more remarkable for commercial instincts than for scientific attainment, once spoke contemptuously of the library of the late Prof. Jewell, saying that it contained "nothing but a lot of old medical journals." We think he but voiced a sentiment, all too common in the profession, but one we are sure that will meet with little sympathy from the original workers and writers in medicine. To these the files of the standard journals are about the most valuable books to be found in a medical library. In medical societies it is generally possible to pick out the man who subsists largely upon textbook pabulum, and it will be generally observed that he is not the most interesting contributor to the proceedings. The industrious student knows that he has not exhausted a subject until he has gone through the files of the great journals.

We hold it to be axiomatic that any journal that is worth a subscription is worth binding, and no journal that does not have a complete index to each volume is worth binding,—therefore it is not worth taking.

The labor of consulting journals, even when properly bound, is very considerable. The examination of the files of THE JOURNAL necessitates the handling of fourteen volumes and the running of as many indexes. For any one to properly appreciate this work, they should examine the indexes of the last thirty or forty volumes of the *American Journal of the Medical Sciences*. While this labor is somewhat lessened by index *résumés* they are but clumsy excuses for a general index—at least once in five years every medical journal of any importance should issue a general index. The only medical periodical of any importance that does this is *Schmidt's Jahrbücher*, and every earnest worker will agree with us when we say that this feature alone gives an unequalled value to that publication.

In these days of labor saving contrivances it is not too much to ask our publishers to print a general index;—we do not ask that they be given to us, but humbly petition for the privilege of buying them. HAROLD N. MOYER, M.D.

434 West Adams street, Chicago.

A Correction.

To the Editor.—In THE JOURNAL of the 18th inst., in the report of the Mississippi Valley Medical Association Proceedings, your reporter stated that I "reported six cases of gunshot injury of the abdominal cavity in which the viscera were injured, with five recoveries and one death." My paper was *confined* to the report of cases of

penetrating *stab* wounds of the abdomen, and hence *gunshot* wounds were not considered. By correcting the mistake in your next issue you will oblige Very truly yours,

H. O. DALTON, M.D.

NECROLOGY.

Robert Stevenson, M.D.

Dr. Robert Stevenson, of Adrian, Mich., died of apoplexy in the city of Vienna, Austria, August 9, 1890. The *Adrian Press*, in an eloquent tribute to his memory says: "The sad news of Dr. Stevenson's death occasioned a general feeling of sorrow, for no man was more widely known among our citizens, and to the people of the county than he, and surely none were more universally esteemed and respected. His skill in his profession, and his genial social nature, gave him a wide popularity, and always made him a welcome visitor in the sick room. He carried perpetual sunshine in his countenance, and under all circumstances, and upon all occasions, was a perfect type of the old-school gentleman, affable, courteous, genial and cheery, yet always maintaining a dignified bearing that proclaimed him the true gentleman. He was a man of broad culture, sympathetic nature, pure character and unquestioned integrity. For many years he had been an honored member of the Presbyterian church. He was also a member of Adrian lodge F. & A. M., of Adrian Commandery.

"He was born in Ireland in August, 1823, and obtained his medical education at the University of Glasgow. His first service was as surgeon on a whaling ship. After a six months' cruise he sought his fortunes in America. He settled in the city of Adrian, where he has since resided and built up a practice that heralds him as one of the leading physicians of the State. Dr. Stevenson became a member of the American Medical Association in 1876, and has usually attended its annual meetings; he was a member of the Michigan Medical Society, and also the Southern Michigan Medical Association. Dr. Stevenson was a delegate from the American Medical Association to the British Medical Association, and to the Tenth International Medical Congress, which was held at Berlin. He was married in 1851, and of eight children born to him, four are now living."

DR. CHARLES STEEL THOMSON, born in Toland, Conn., April 6, 1801, and a son of Dr. Gordon Thomson, a medical celebrity of a hundred years ago or more, died recently in New Haven, Conn. He was a graduate of the Yale Medical College, class of 1822, and since 1883 was the oldest living graduate of that institution.

BOOK REVIEWS.

THE DISEASE OF THE SKIN CALLED PAGET'S DISEASE. A contribution to the Study of the Cutaneous Psorospermes and of Certain Forms of Cancer.

MALADIE DE LA PEANDITE MALADIE DE PAGET, par DR. LOUIS WICKHAM. Paris: G. Masson, 1890.

In 1874 Sir James Paget described the peculiar inflammation of the nipple and areola of the breast that preceded the development of cancer. This condition has since been called malignant papillary dermatitis. It remained, however, for Darier (*Sur une forme de psorospermose, ou maladie de Paget. Société de Biologie*, April 13, 1889) to demonstrate the parasitic nature of the affection. He has also contributed several important chapters to this monograph.

The work opens with a definition of Paget's disease, which is said to be a parasitic affection, belonging to the group of cutaneous psorospermes, characterized by chronic inflammation of the skin, its glands, and their ducts, followed by epithelial proliferation. Up to the present this disease has been considered a special affection of the breast and mammæ, but other regions may be affected; there is recorded an undoubted example of its location in the scrotum.

The first portion of the work is devoted to an historical consideration of the literature, etiology, symptomatology and diagnosis. There is little in this portion to call for special remark, as it is largely based upon the older descriptions of the disease.

Chapter ii of the second part contains an unpublished memoir from the pen of Darier on a case of Paget's disease of eleven years' standing, but without epithelioma. The histological investigation included an examination of scales taken from the surface, and a portion of excised skin. The scales were examined directly and after treatment with reagents. The best results were obtained with the iodine solution of Gram. It is well to macerate large squames in ammonia water before mounting them. Preparations made in this way and stained with hæmatoxylin brought prominently into view the protoplasmic contents and the eucapsulating membrane. A portion of the excised skin was prepared in osmic acid, but the results were poor; another part hardened in alcohol and stained with micro-carmin showed clearly the relation of the parasite to the diseased structures. Lesions were found in the epidermis and true skin. Darier was not able to obtain a special stain for the parasites. In diagnosing a case of Paget's disease it is only necessary to scrape the part and look directly for the parasite among

the normal epidermal scales. They are recognized by their size, being usually somewhat larger than the cells from the deeper layers of the epidermis. The cyst wall has a distinct double contour, and within this there are frequently two or three and sometimes more protoplasmic bodies containing nuclei. If these structures are hardened in alcohol, a peculiar effect is noted in that the protoplasmic contents shrink away from the cyst wall in places, so that ray-like prolongations extend from and attach the protoplasm to the enveloping membrane. These characteristics are ordinarily sufficient to distinguish this parasite from any cell found in this situation.

The writer made some experimental inoculations upon rodents, but without success. Upon his own skin the writer likewise failed to obtain a growth, though they were kept for eight days in contact with a scarified part. Cultivations were attempted upon damp sterilized sand. At the end of sixteen days the cyst remained perfect, but the protoplasm retracted. The author classifies these bodies in the group of oral psorospermes, and considers them truly parasitic.

The writer refers the development of epithelioma in these cases to a simple cell proliferation brought about by the chronic inflammation due to the presence of the parasite.

The author closes the volume with sixteen conclusions, some of which we have already referred to. He would place Paget's disease in the same class as the vegetating follicular psorospermes, which ought also to include the molluscum contagiosum of Bateman. The disease, while manifesting a strong predilection for the breast, is not confined to that region. The affection is curable in the earlier stages and the treatment should consist not in excision, but the application of antiseptic remedies.

While it is perhaps presumptuous in the writer to criticise the French of this book, there certainly are too many repetitions and too many obscure sentences. They seriously mar a monograph of rare interest and value.

The work is illustrated by four excellent plates, one of which is colored.

FLUSHING AND MORBID BLUSHING; THEIR PATHOLOGY AND TREATMENT. By HARRY CAMPBELL, M.D., B.S. (London). London: H. K. Lewis, pp. 270.

Under this remarkable title the author has gathered a large number of observations on what may practically be described as a minor symptom of instability in the nervous centres. As is now the fashion, these manifestations of vaso-motor irregularity are explained by discharges in cortical brain areas whose existence are as yet hypothetical. A flush is described as "a nerve-storm in which a rush of blood to the skin and a sense of heat are generally the most obtrusive manifesta-

tions." The distinction between flushing and blushing is indefinite with the exception that flushing is usually connected with some sexual irregularity and blushing is excited by some emotion. In justification of the term morbid or pathological blushing a number of cases are cited (p. 135), some of which follow:

Æt. 27 (man). Was a soldier, but compelled by excessive blushing to give up his profession.

Æt. 28 (man). Has recently had to give up the study of medicine through excessive blushing.

Æt. 32 (man), minister. Is so afflicted by blushing that he has latterly entirely given up duty.

Another patient is a commercial traveller (!) and a telephone clerk is so badly affected that he turns scarlet even when speaking through the 'phone. From this list it may be seen that the British male is sometimes slightly effeminate.

Nothing new, important, or useful is brought out in the book, and it is impossible to feel that all the labor it represents has been judiciously expended, when so many important fields of enquiry are open and offering such rich harvests to those who will till them.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of September, 1890, compared with the preceding month, the reports indicate that puerperal fever, influenza, membranous croup, erysipelas and diphtheria increased, and that measles, inflammation of brain, cholera morbus, cerebro-spinal meningitis and cholera infantum, decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity was less, the relative humidity was more, the day ozone and the night ozone were less.

Compared with the average for the month of September, in the four years 1886–1889, pleuritis, influenza and scarlet fever were more prevalent, and small-pox, puerperal fever, typho-malarial fever, inflammation of brain, whooping-cough, cerebro-spinal meningitis, typhoid fever and measles were less prevalent in September, 1890.

For the month of September, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was lower, the absolute humidity was less, the relative humidity was more, the day ozone and the night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of September, 1890, at 57 places, scarlet fever at 54 places, typhoid fever at 73 places, and measles at 18 places.

Reports from all sources show diphtheria reported at 8 places more, scarlet fever at 6 places more, typhoid fever at 12 places more, and measles at 6 places less in the month of September, 1890, than in the preceding month.

LETTERS RECEIVED.

Clark, Forbes & Co., Miamisburg, O.; Dr. W. W. Arnold, Colorado Springs, Col.; Dr. J. F. Jenkins, Tecumseh, Mich.; Dr. G. E. Frothingham, Detroit, Mich.; Dr.

H. W. Blanc, New Orleans; Dr. W. E. Brenneman, Golden, Ill.; Dr. D. N. Jones, Gaylord, Minn.; J. W. Harrison, Jersey City, N. J.; D. A. Beaver, Shermerville, Ill.; D. L. Hughes, Keokuk, Ia.; Dr. Geo. H. Grant, Richmond, Ind.; Dr. Chas. Knapp, Evansville, Ind.; The Victor Safe and Lock Co., Cincinnati, O.; Dr. H. L. Getz, Marshalltown, Ia.; Amesbury Carriage Co., Amesbury, Mass.; Egbert, Fidler & Chambers, Davenport, Ia.; August Spankus, Milwaukee, Wis.; Dr. P. W. Baer, Pleasant Hill, Neb.; Dr. T. E. Boylan, Cincinnati, O.; Dr. W. T. Belfield, Dr. W. E. Casselberry, Chicago; University of Pennsylvania Press, Dr. John B. Roberts, Dr. J. Solis-Cohen, Philadelphia, Pa.; Dr. E. Cutter, Hunt & Eaton, Dr. M. E. Van Fleet, A. L. Chatterton & Co., W. P. Cleary, Scott & Bowne, The Maltine Manufacturing Co., The Chas. H. Phillips Chemical Co., Frank, Kiernan & Co., New York City; The Subscription News Co., Dr. H. T. Byford, Dr. H. Wardner, Lord & Thomas, Chicago; H. S. Hutchinson & Co., New Bedford, Mass.; Dr. H. R. Guthrie, Sparta, Ill.; Dr. D. W. Grear, Jonesboro, Ill.; Dr. W. W. Gourley, Wallonia, Ky.; R. A. Robinson & Co., Louisville, Ky.; Dr. L. B. Bitz, Blairsville, Ind.; Dr. Louis A. Roller, Detroit, Mich.; Dr. Robt. Reyburn, Washington; The Eastman Co., Rochester, N. Y.; Dr. C. G. Bacon, Fulton, N. Y.; The Antikamnia Chemical Co., St. Louis, Mo.; Dr. J. P. West, Bellaire, O.; The DuBois Mfg. Co., Philadelphia; Dr. J. H. Woodward, Burlington, Vt.; D. Machlachlan, Edinburgh, Scotland; Dr. W. L. Worcester, Little Rock, Ark.; Dr. Marie B. Werner, 1010 Clinton St., Philadelphia; Dr. W. C. Wile, Danbury, Conn.; Dr. J. G. Orton, Binghamton, N. Y.; Dr. Albert L. Gihon, Brooklyn, N. Y.; Dr. T. H. Manly, New York City; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. J. R. Dunglison, Philadelphia; C. L. Topliffe, New York; Dr. W. E. Brenneman, Golden, Ill.; Dr. J. Stout, Ottawa, Ill.; Dr. J. R. Landers, Fairland, Ill.; Dr. Wm. B. Dewees, Salina, Kan.; Dr. T. D. Crothers, Hartford, Conn.; Dr. Chas. W. Hitchcock, Detroit, Mich.; Methodist Book Concern, New York; Dr. Fisk, Denver, Colo.; Dr. A. C. Mercer, Syracuse, N. Y.; John E. Ruebsam, Washington; Dr. Henry O. Marcy, Boston; Sharp & Smith, Chicago; J. A. Flexner, Louisville; Dr. A. E. Foote, Philadelphia; Dr. Geo. H. Grant, Richmond, Ind.; Cincinnati College of Medicine and Surgery; J. T. Petty, Washington; Dr. J. C. Lange, Pittsburgh, Pa.; Dr. Wm. D. Hamilton, Columbus, O.; Maltine Mfg. Co., New York. Dr. Mc.D. Purcell, Philadelphia; Dr. John Shradly, New York City; Dr. A. N. Bell, Brooklyn, N. Y.; Dr. Paul Gibier, Dr. Henry Macdonald, New York City; Dr. J. C. Laing, Pittsburgh, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 11, 1890, to October 17, 1890.

Capt. Andrew V. Cherbonnier, Medical Storekeeper, retirement from active service on October 12, 1890, by operation of law, under the provisions of the Act of Congress approved June 30, 1882, is announced. By direction of the Secretary of War. Par. 11, S. O. 240, A. G. O., Washington, October 13, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 18, 1890.

Surgeon George A. Bright, detached from temporary duty at the Naval Academy, and placed on waiting orders. Surgeon J. G. Ayres, detached from temporary duty at the Naval Academy, and placed on waiting orders. P. A. Surgeon George P. Lumsden, detached from the U. S. S. "Boston" and granted three months' leave. P. A. Surgeon E. W. Auzal, detached from the Naval Academy and ordered to the U. S. S. "Boston." Surgeon Howard Smith, ordered to appear before the Retiring Board at Mare Island, Cal.

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ORIGINAL ARTICLES.

LEGAL ASPECTS OF SPINAL CONCUSSION.

Read in the Section of Medical Jurisprudence, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY S. V. CLEVINGER, M.D.,
OF CHICAGO.

My paper was announced with the above heading through inadvertance, but it does not matter, as there can be but one scientific consideration of the subject, and whatsoever pertains to the medical features of this derangement necessarily concerns the legal, as a broken head or leg should be nothing else in law than what they are in medicine. There are, however, artificial matters not properly involved in the question of the real existence of injuries of any kind, that burden law books and works on medical jurisprudence.

The fact that there may be a preponderance of subjective symptoms in alleged concussion cases does not make such accidents peculiar in a medico-legal sense, for several forms of insanity and many physical ailments, at times, discussed in courts possess this same disadvantage. But turning from those rather hackneyed matters let me present a fresh aspect of the subject in a paper on

ERICHSEN'S DISEASE, AS A FORM OF THE TRAUMATIC NEUROSES.

"What's in a name?" says Shakespeare. Instead of being distinctive, names are too often sources of confusion, as botanists, zoölogists and anatomists are aware. Plants in the system of Linneus were specifically named "montana" when they were not exclusively mountainous; animals called "fluvatile" were, later, found oftener in lakes; the "pituitary gland" is neither pituitary nor a gland, the arteries were named as air receptacles, and so we might multiply misnomers indefinitely because of the attempts of our ancestors to make names superficially descriptive. About twenty-five years ago Erichsen described a variety of derangements following upon concussion of the spine. Now nothing could be simpler, apparently, than the expression "spinal concussion," and nearly everyone fancies that no misunderstanding could arise in the use

of such a term. Nevertheless that very title has in itself occasioned great misunderstanding, because it had a restricted as well as a general meaning.

The cause of this confusion dates from Erichsen's description of the different kinds of ailments that may arise from blows to the back, such as severe direct injury to the spine causing demonstrable cord lesions, slight indirect or remotely occasioned back injuries, sprains, strains, wrenches and twists of the spine, wherein occurred cord compression by extravasation or inflammatory exudations, nutritive cord alterations, and a "functional disorder" to which he gave no name, but which came to be known as the disease "spinal concussion," caused by a spinal concussion. In the interests of scientific medicine I named that so-called functional disorder "Erichsen's disease" because John Eric Erichsen was the first to describe a particular group of symptoms that often follow upon concussions.

That distinguished London surgeon wrote to me as follows:

I assure you that I feel much gratified and very highly flattered by having my name appended by you to the group of symptoms so very characteristic and remarkable, when taken in the concrete, which I believe that I was the first to describe, which result from that peculiar form of spinal injury now recognized under the term of "spinal concussion."

Had Erichsen given any sort of a name to this disorder, however arbitrary that name might have been, there would have been less occasion for the wrangling that has occurred in court rooms all these years.

Instead of entangling ourselves in the endeavor to explain that spinal concussion symptoms may sometimes be induced by a spinal concussion, misunderstanding is impossible when we say that a concussion of the spine may originate a vast range of troubles, such as dislocation of the vertebrae, cord injuries, etc., and it may also cause Erichsen's disease.

What then is Erichsen's disease? It is a serious disturbance of the functions of the spinal cord without there being demonstrable cord lesions. Such disturbance can be best accounted for by supposing that the spinal sympathetic system has been deranged, secondarily interfering with the blood supply of the cord and its membranes, con-

joined with other vaso-motor phenomena such as emotionalism, flushings, cardiac rapidity, hyperidrosis, sleeplessness, headache; directly due to the original sympathetic system derangement. The fact that the group of subjective symptoms and objective signs are distinct from other disorders sufficiently set it apart from other ailments or traumatic neuroses, and justify its special title. The claim is sometimes made that naming diseases after individuals is unscientific and burdens our nomenclature unjustifiably. This is true only in a certain sense and it is easy enough to formulate a law when such christening would be proper. The golden mean can be observed in this as in other respects, and the matter is one of such great importance that I do not hesitate to take up time in its elucidation. No trivial reason should justify such naming, but when there is an eminently proper cause for so doing, such as in this instance, the medical profession would profit by having the discoverer's name forever associated with the disorder.

If a disease can be accurately named descriptively, then the descriptive name should be preferred, but the risk is run that with the advance of knowledge the name ceases to be descriptive and too often is absolutely erroneous and misleading. At one time the sacrum was dubbed sacred as the seat of the soul, because supposed to be imperishable.

A formidable disease became universally prevalent after the return of Columbus from America and we were threatened with its perpetuation as the American disease, just as at one time its companion was known as *Französische-Krankheit*; but as attention was called to the fact that the greatest pretenders to piety were the most numerous sufferers a diversion was made in favor of the title "holy sickness." The etymology of the word "syphilis" is obscure, and hence the name is arbitrary and becomes as much of a *nomen proprium*, as had it been called Smith's or Jones' disease. Gonorrhœa is a misnomer, because it means a flow of sperm.

Huxley opposes descriptive names, in the main, in zoölogy, and holds that it is far better that we should forget the etymology of any animal name, and use it merely as a title without regard to its origin.

Descriptive naming is carried to extremes by savages in such appellations as "Sitting Bull," "Red Jacket," "Man-Afraid-of-his-Horses," and the tough element in our cities describe one another as "Shorty," "The Bruiser," etc. I merely mention this as an offset to the radical claim that diseases should in no case be named after those who first described them. Purely arbitrary names that convey no descriptive meaning often have decided advantages, the foremost advantage being that an arbitrary name such as Bright's, Addison's, Grave's disease cannot pos-

sibly mislead. You receive the history of the disorder in the name and are compelled to learn what it was that Bright, Addison and Graves discovered.

I was disposed to the belief that this sort of thing could be overdone, through naming of such obscure complaints as Thomsen's disease, infrequently occurring disorders such as the Cheynes-Stokes breathing, Argyll-Robertson pupil, but as the law of survival of the fittest would overtake inappropriateness in this regard, I now incline to thus honor discoverers, and we all realize that little enough honor is accorded by any delver in our profession, however conscientious and gifted.

Let me tell you of an instance where immense advantage would have been gained by avoidance of attempts to describe a disease in a name: The terrible form of insanity now called "paretic dementia" by alienists was first described by Bayle in 1822-26. Later Calmeil missed the opportunity of his life, because, while he clearly recognized the differences it presented from other forms of insanity, he did not attach his predecessor's name to the malady as he should have done. So doing would have saved thousands of insane from the gallows, the guillotine, the prison. Could we have had Bayle's disease, instead of the present abominable array of misnomers, every physician would have known something about it, and recognized it as an entity, instead of to-day having to learn that there is a disorder that suddenly attacks some overwrought business men, oftener the rich than the poor, the ambitious rather than the drone, the intellectual rather than the thoughtless; the trouble that killed Sir Walter Scott, and other historical personages, a trouble whose pathology has been worked out even better than has been that of pneumonia; a mental ailment that presents distressing problems mainly because so few know what is absolutely known concerning it. It is too late to call it Bayle's disease, it is with the utmost difficulty that the recent designation "paretic dementia" is favored. I speak to you of the affection that has been called in our books "general paralysis of the insane," "progressive general paralysis," "general paralysis," "general paresis," "paralytic dementia or dementia paralytica," "progressive paresis," and their equivalents in French and German. Not one of these descriptive names really described the disorder, and excellently educated physicians, not versed in this particular matter, have been led into deriding the very existence of the complaint, *through taking the name as descriptive*. Fordyce Barker, of New York, who was a specialist in everything, aroused the applause of the court room mob in the Guiteau trial by swearing that there was no such thing as "general paralysis" except in death. Yet doubtless not one in that court room but would have thought he understood precisely what was meant

had the atrociously lying name "softening of the brain" been used instead.

A volume could be written upon the accursed influence of that word grouping: "softening of the brain." It has been used in a metaphorical sense for a century. In the ignorant mind satisfactorily descriptive of what to the pathologist is complex, and often involves sclerosis, atrophy, or putting it popularly, "hardening of the brain."

While pathologist of the Chicago County Asylum the certificates I filed from the thousand city practitioners included in "softening of the brain" at least fifty dissimilar insanities, such as melancholia, paranoia, atheromatous insanity, hebephrenia, mania, katatonia, circular insanity, confusional, stuporous insanity, and even terminal dementia. Every insanity almost was "softening of the brain."

Every physician in the world should remember that from the standpoint of the alienist there is no such disease as "softening of the brain." The pathologist can tell you of numerous kinds of brain softening; red, yellow and white, that are merely degenerative processes more often associated with paralytic than mental phenomena, subsequent to extravasations, embolisms, thromboses. Whosoever speaks of "softening of the brain" as a mental derangement either caters to ignorance or is himself ignorant of alienistic science.

Turning again to scientific nomenclature we find precision in electrical science in the naming of measurements: farads, volts, ampères, ohms; and in currents: the faradic, galvanic and franklinic, after Faraday, Watts, Ampère, Ohm and Franklin. Very true the names themselves convey no meaning to the uninstructed in electrical science, just as the term Erichsen's disease would compel some attention as to what was meant, though every ass would suppose he knew what was included in "concussion of the spine" and "softening of the brain."

Oppenheim, of the Berlin University, carefully studied the effects of concussion accidents and incidentally some nerve injuries, and included all under the title "Traumatic Neuroses," and forthwith that name has been adopted by several writers in lieu of spinal concussion. The impropriety of this is evident when we reflect that while Erichsen's disease may be a traumatic neurosis, sciatica, paralysis agitans, chorea, myelitis, epilepsy, and myriad diseases may also be traumatic neuroses, so that term is too generic, and the fact that Erichsen's disease is one of medico-legal importance does not warrant so sweeping a designation in which can be included thousands of other ailments.

S. Weir Mitchell, during the late war, made extensive researches with regard to direct injuries to nerves, and the traumatic neuroses described in his book differ widely from those investigated by Oppenheim.

Sperling and Kronthal, in the *Neurologisches Centralblatt*, June 1-15, 1889, report a case that died from cardiac and pulmonary disease, the autopsy revealed arterial sclerosis to a marked degree with occasional hyaline and fatty degenerative spots in the entire arterial system, particularly in the cerebro-spinal vessels. The trunk of the sympathetic was peculiarly degenerated. There were scattered degenerative spots in the white part of the cord and in the gray of the lower dorsal region and a small hæmorrhage in the mid-dorsal region. This sympathetic and arterial degeneration lends great plausibility to the theory I advanced that the spinal sympathetic was the main seat of the disorder.

Meynert, in the *Wiener Klin. Woch.*, 24, 26, 1889, locates the seat of the "traumatic neuroses" in the forebrain. Now no one can have a greater regard for the opinion of this famous cerebrologist, but occasionally Meynert can be as wrong as Charcot or Pasteur, and much of this fallability comes from the impossibility of a single mind, however trained, to grasp all aspects of the limitless field of human knowledge. In these days it is the ignorant alone who claims to be instructed in *all* departments of medicine and surgery.

The depths of our attainments are inversely as their breadth, and the specialist is narrow whose career was not begun as a general practitioner. To be a pathologist and nothing else, a neurologist and nothing else, may confer ability in some few particulars but breadth of thought can only be brought to bear upon a special line through previous observation in many fields.

Meynert has studied the minute anatomy of the brain but he has not studied spinal concussion in its entirety, and his immense knowledge of the cerebrum is misapplied in endeavoring to locate the vast range of general vaso-motor phenomena in a simple lesion of a restricted part of the brain.

Instead of a wrangle over the threadbare legal attitudes this matter can assume I should be glad to have the views of my confrères upon the pathology of the neurosis and the advisability of naming it after the great London surgeon Erichsen.

DR. HERBERT JUDD, of Galesburg, Ill.: In connection with the discussion of the "Legal Aspect of Spinal Concussion" I beg to say that during the past twenty years I have known of twenty-six cases, all in the State of Illinois, of so-called concussion of the spine, that have been brought to my notice, and which I have watched with some interest, while the cases were under consideration by attorneys for corporations, against which claims for damages had been preferred.

I have known of many other cases of this disorder, in which there existed grave doubts of the

patient having sustained any injury, but the twenty-six cases referred to can be verified by the files of papers in the office of the attorney of the Chicago, Burlington and Quincy railroad company, at Galesburg, Ill., and the affidavits and evidence there preserved. When the liability of the railroad company for whatever damages the claimant had sustained was conceded, there were but few of the cases litigated, but were settled prior to suit in some cases and prior to trial in others. In all the cases I especially allude to the genuineness of the claim, that of permanent injury from shock or concussion of spinal cord, was denied by the railroad attorney, upon the candid opinions of surgeons and physicians obtained by the company. In every case, however, the railroad attorney negotiated the best settlement possible, and usually regarded it as good policy to pay liberal sums rather than to submit to a trial when courts could not give protection against perjured, prejudiced and ignorant testimony.

Some of these cases had "litigation symptoms" for a long time prior to settlement. Several of them were so serious as to render the patient bed-ridden and helpless, but in all of them thorough and complete recovery resulted. In most of them recovery was rapid and rather astounding, and it was noted that improvement followed swiftly after the "damages were paid."

Understand that in all these cases, the only question in controversy was that of actual injury. They were cases in which the symptoms were subjective, and the condition of the patient could be determined alone upon his statement, to which too much credence is often given by physicians. These were cases where it was deemed the best financial policy to submit to black-mail to avoid legalized robbery, the amount of which depended upon the sympathies of a jury with a claimant, and their unreasonable prejudice against corporations, all of which they assume to believe are immensely wealthy and able to stand the assessment.

I know of no case of actual patent injury, caused under such circumstances as to create a legal liability, where there was any serious trouble in arriving at a fair and just sum to be paid as damages, satisfactory to both parties; nor do I ever expect to see such a case of actual permanent injury, in court and on trial where the question of liability has been conceded.

All such honest, just claims can be and ordinarily are settled out of court. I have little faith in book cases of spinal concussion.

These special cases I have referred to had their origin in the hints, and suggestions and help of Erichsen. The study of Erichsen began with date of accident to train; the patients were crammed with directions for fraud. The cases I have in mind were carefully watched and traced up after settlements were made. This was done

as a source of information and to verify if possible the views of fraud entertained; and, as I have already stated, every one of them recovered, and in several of them the fraud became so apparent as to cause some notoriety to the patient, and some unenviable notoriety to the advising physician, especially in a few cases of complete recovery after a long and no doubt laborious siege of "total disability."

I believe there is a maxim of the criminal law that every person is to be regarded as innocent of crime till proven to be guilty. It seems about time that surgery should have and act upon a maxim, that every person claiming disability from concussion of the spinal cord, where no objective symptoms are to be discovered, is to be considered as planning for your aid in enabling him to rob some employer; until you can by your own knowledge of the case discover that injury actually exists.

If physicians would or could consider and treat all cases of alleged spinal concussion without regard to, or any consideration of the desires of the patient to reap a money compensation, there would be less difficulty in effecting cures. If the physician would confine his services strictly to his own duty to effect a cure, and refuse to consider or meddle with the financial or pecuniary plans of his patient, he would attain much more brilliant success in his treatment. If he in good faith endeavors to effect a cure, and not to establish a case of permanent injury for the pecuniary benefit of the patient, or to gratify his avarice, he would find few cases of the disease under consideration.

How many cases of concussion of the spinal cord can any of you recall in your own practice, where the patient fell from a load of hay, or was thrown from his own wagon, or fell from a barn loft, or received injuries or met with an accident for which no one but himself or his own family were blamable? If you would consider these cases as you consider and treat spasms in children during the first and second dentition, or fits resulting from worms, you might be led to better means of improving the physical condition of the patient. If you would refuse to minister for the benefit of the patient's estate, and apply your skill to his person, you might acquire more success. If you would exert your proper influence to keep your patient out of the hands of the "calamity lawyer," and to shut out from his mind all present consideration of the possible pecuniary gain, you would have taken a giant step towards his cure.

Is it not our duty as physicians to benefit the physical man, even at the expense of property?

Is not health worth more than riches, even honestly gained? I have said this much with the sincere desire for the good of the profession. Facts are "brutal things" to deal with.

DR. CLARK GAPEN, of Omaha, agreed with Dr. Clevenger that the disease described by Erichsen under the name "spinal concussion" should be named "Erichsen's disease," not only to fix it more accurately, but because a large amount of obloquy attends the subject which Erichsen ought to bear. His book is said to have cost English railways fifty million dollars, and American railroads as much more. Dr. Gapen had taken Erichsen's cases and classified the symptoms under objective and subjective heads, and was amazed to find how few were the objective. His experience had in the main agreed with that of Dr. Judd in that most of the cases were either hysterical or malingering; moreover, many of the symptoms, as flushing, increased temperature, emotionalisms, were in fact cerebral symptoms rather than spinal. Page has shown how difficult it is to injure the cord owing to its looseness in the bony canal and the fact that it is surrounded by fluid. Actual injury is very rare and usually well marked from the outset.

DR. HAROLD N. MOYER, of Chicago, stated that he was rather astonished at Dr. Judd's statement that concussion cases did not occur unassociated with damage claims. Dr. Judd's experience must be limited indeed to allow him to make a remark of that kind, for in the past five years Dr. Moyer had seen a large number of concussion cases in which there was no suspicion of a damage suit, and these did not differ at all in course, symptoms, duration or termination from those that had been the subject of legal contention. Dr. Moyer heartily agreed with Dr. Clevenger in suggesting the propriety of the term "Erichsen's disease;" while it is not all that one could desire, yet it is such a great improvement upon that of "spinal concussion" that it should be adopted, at least until the pathology and morbid anatomy of these conditions shall be better understood.

In reply to Dr. Moyer; DR. JUDD said he had been in active practice twenty-two years, that he had seen concussion cases in which there was no suspicion of a damage suit, but that all such cases recovered; that litigation cases did not recover until paid for.

DR. ORPHEUS EVERTS, of Cincinnati, said: I approve the suggestions of the paper, and think the adoption of the term "Erichsen's disease" proper and useful. If a definite term is used by a medical man referring to disease, such as "Bright's disease," "Basedow's disease;" as to surgical operations, such as "Battey's operation," etc., it is generally, or presumably, because he has definite ideas respecting conditions thus named after original investigators, while more general terms, such as "spinal concussion," "kidney disease," etc., do not convey such definite ideas, or other than vague notions of some disorder of organs named, however slight or severe, or however caused.

It is convenient, however, for practitioners who are not scientific to have these general terms for use in emergencies—they sound well, and if delivered with proper expression go a great way in confirmation of one's reputation for wisdom. For example, the term "softening of the brain." If one meets with obscure but serious cerebral symptoms all that is necessary is to say, with becoming gravity and a look of significance, "softening," and the whole business is settled.

"Congestion" used to be the favorite term by which to account for failure in treatment of various forms of disease, terminated often unexpectedly by death. All the baffled practitioner had to do was to shake his head, and say "congestion." Such terms are convenient—for the concealment of ignorance. The name of Erichsen is worthy of commemoration, and may well be associated with a form of disease which he has so well described.

DR. KIERNAN, of Chicago, had the clinical experience of Dr. Moyer. That railroads were not always of the type described by Dr. Judd was shown by the Chicago railroad "jury fixing" cases. That spinal concussion existed, the case reported by Dr. McIlvaine, of Peoria, would alone demonstrate. A female victim of a railroad accident had been suspected by Dr. McIlvaine of being a malingerer. She had secured damages, but the spinal disease had gradually progressed into helplessness and death. Dr. Kiernan had himself seen similar cases.

DR. G. FRANK LYDSTON, of Chicago, said: I consider the work which Dr. Clevenger has been doing upon the subject of so-called "spinal concussion" a most important advance in medicine. His adoption of the term "Erichsen's disease," while open to some objections, is on the whole a wise and useful plan. The laity have already learned that spinal concussion is an omnibus which may be made to cover much malingering. By the adoption of the term "Erichsen's disease" we will at least compel the humbug to learn his lesson over again. The term will certainly convey to the malingerer the idea of a distinct and definite affection which he must substantiate by plain and positive proofs. I am aware that it is not easy to evolve order out of the chaos of symptoms which characterize the results of concussion of the spine, but as far as may be I believe that Dr. Clevenger has accomplished it. His explanation of the pathology of the varying phenomena of Erichsen's disease, is thus far the only rational and intelligible one in medical literature. I regret that he has not said more of his theory to-day. Personally I would advise those who are not familiar with his views, to read his book. If others derive the same benefit from its perusal that I have done, they will feel amply repaid.

DR. CLEVINGER, in closing the discussion, stated that he had been astonished at the im-

provement of some patients after the settlement of damage claims, but this seemed to be due to the relief from worry which the conclusion of the suit afforded; but it would be presumption to affirm that such cases were *entirely* cured until years had elapsed and unprejudiced opinion been engaged. This "quick cure by settlement" savored too much of the unscientific assertion of Herbert Page, who was the most ordinary special pleader for railways.

While both Dr. Gapen and Dr. Judd had been opposed to Dr. Clevenger in recent suits against corporations, and seemed to look at the matter from one standpoint, the latter had frequently been called as expert for either side, and sometimes for both sides at the same time.

The statement that there were no vaso-motor centres in the spinal cord, and hence the symptoms were cerebral, was rather surprising, when the sympathetic system is so intimately united to the spinal all the way down the cord length, and such ordinary matters as constipation and hæmorrhoids producing brain troubles show that such "vaso-motor" difficulty as emotionalism need not have its origin necessarily in the head.

The intimation that subjective symptoms were always false, when made the basis of claims against railways, is on its face absurd. Physicians have to judge from the consistency of symptoms whether they were real or not.

Contrary to Dr. Gapen's findings, Dr. Clevenger had devoted all his spare time for three months in analyzing Erichsen's cases, and found an abundance of objective signs in all. But it depends upon what is meant by "objective." To the uneducated the galvanometer and electrical indications convey no meaning. Paralysis and insanity of the gravest kinds would present nothing "objective" to the biased witness. There are cases in which no honest opinion can be reached, and in such it is best to allow the mind to remain a "scientific blank," as Huxley advises. Only the untrained imagine they must have a positive opinion upon everything under the sun. Sometimes a little waiting will determine matters.

A case examined a year ago presented nothing but purely subjective symptoms, and to-day there is atrophy of an arm. In another instance a laborer fell partly into a coal hole, with one leg in and the other out, and after a year is unable to do any work, but there was such an utter absence of anything in the way of electrical or other findings, and so many of the ordinary symptoms of Erichsen's disease were missing, that Dr. Clevenger told the lawyers that everything depended upon the credibility of the witness, and he preferred having nothing to do with the case as it stood at present.

We find many instances, in and out of the books, of fatal issues among patients accused of malingering. We occasionally find a conscientious

railway surgeon who acknowledges that railway accidents do not always improve health, and that a few dollars' settlement will not resurrect the dead.

A NEW METHOD OF LARYNGEAL AND BRONCHIAL MEDICATION BY MEANS OF A SPRAY AND TUBE DURING THE ACT OF DEEP INSPIRATION.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY J. MOUNT BLEYER, M.D.,
OF NEW YORK.

I bring before you a novel method and use of the ordinary cold spray. By the extra aid of a hard rubber tube six inches in length and three-quarters of an inch in diameter on both sides of its openings, through which a cold spray with tip pointing downwards is passed and held in the mouth between the lips which are clasped over the tube. With this tube, spray, and position of the lips and deep inspirations any desired medicated fluid amounting from a half to one ounce may be forcibly inhaled during the act of ten deep inspirations, and thus reach the deeper portions of the respiratory tract, without coughing, gagging, or immediately expectorating the fluid thus inhaled. The time occupied for re-expectorating the fluid medicament thus inhaled varies in different individuals. Some begin lightly within from five to ten minutes after the inhalation, others again half to three-quarters of an hour later. The sputa which is expectorated for several hours after contains a certain amount of the medicated inhalent used, showing thereby that the desired medicament used remains in contact with the diseased parts long enough to have its therapeutic effect.

The Method of Making an Application.—The patient is placed in an upright position, or, better, standing. The collar or tight dress about the neck is removed so that nothing interferes with taking deep and slow inspirations. The position of the head is an important point to be observed. It must be inclined backwards during the act of each inspiration so as to destroy as much as possible the rectangular curve that the windpipe makes with the oral cavity. The patient before being made to use these two instruments, must be shown how to take deep inspirations and slow expirations without exerting himself. He must also be taught how to hold in the breath for a few seconds after each inspiration. Those are some of the cardinal points to be looked after in order to get the results from each inspiration. These points are easily acquired by patients. When once understood how to make use

of such inspiratory and expiratory powers, without the spray and tube, then begin the same method over again; with this exception that the instrument (spray and tube) are now used for practice, as if the patient was taking an inhalation. Place the tube half its length into the mouth; the lips are clasped over it. The spray is placed into the opening of the hard rubber tube into which the spraying tube is inserted so that its inner end protrudes not more than one-quarter of an inch. This point regarding the size and position of the tube is very important. The best motor power for the propulsion of the spray, to my mind, is compressed air. The pressure need not exceed 60 lbs. This will suffice for any application.



FIGURE 1.

It will be found during the act of deep-forced inspiration that the vocal cords separate and, still further, on inspiration they will separate to their entire extent. In the subsequent expiration they will again approach each other. During inspiration the vocal cords form a wide and almost pentagonal opening, and under favorable circumstances one can on examination then see the bifurcation of the trachea; as seen in the accompanying drawing.

The epiglottis stands nearly erect, if not, through its anatomical formation, is curled upon itself or may assume another shape. These physiological facts are known to every one who practices with a laryngoscope.

The tube serves as an adjunct to the propulsion

of the specified inhalent. The tube, and the act of deep inspiration, also diverts the attention of the inhaler, and thereby calling into action another set of muscles favoring the passage of the inhalent. During the act of deep inspiration the tongue lays flat in the mouth, and as described before, the vocal cords and epiglottis are now in a position to permit the passage of the medicant, and assisted in reaching the desired spot by the propelling force of compressed air.

I have made numerous experiments with this method of application upon the dog and rabbit before using it upon my patients, the details of which are beyond the scope of this paper. Never-

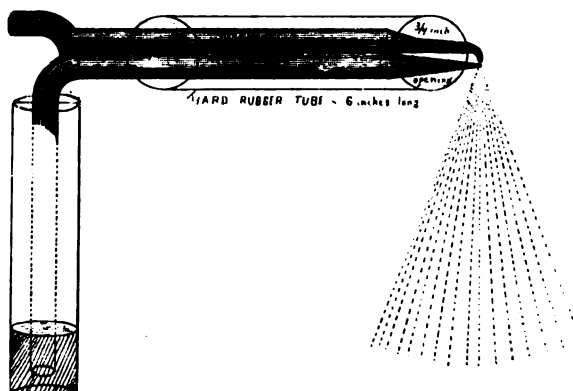


FIGURE 2.

theless, I will give a short description of one of these experiments in order to show the effectiveness of this method in the application of medicaments in a fluid state to the deeper portion of the respiratory tract.

A healthy dog weighing fifty pounds was placed upon a table. The mouth was opened and the rubber tube inserted to its proper length. The mouth was then fastened over the tube by straps made for the purpose. The tube being open the respiration was thus carried on undisturbed. The spray was then attached and the animal made to inhale. The substance used was a strong solution of the extract of rhatany, the quantity sprayed being half an ounce. This almost immediately brought out a bright



FIGURE 3.

redness of the larynx, trachea, and of the bronchi, which entirely disappeared after the discontinuance of the spray in about two hours from those parts under examination.

The sputa, however, continued to be red some five hours longer; at this point the animal was killed and a post-mortem examination was made. Quantities of the fluid inhaled were found depos-

ited throughout the trachea and smaller bronchi. Other experiments made with the same end in view gave similar results.

It is a well known fact that finely divided substances do penetrate into the air cells, as in the case of colliers, grinders and others who are constantly inhaling pulverized particles and matter while engaged in their occupations. On the other hand it is extremely doubtful if any of the medicaments used in any of the numerous inhalers at present in vogue ever reach the walls of the ultimate lung alveoli. The conditions under which and the extent to which sprays and vapors enter the lungs are to a certain extent satisfactory, most authorities who have written upon the subject and carried on experiments in this line, as, for instance, those made by Dr. Arthur Hill, Hassall, of St. Remo; Fournie, D'Emarguay, Tavernier, Bataille, Schnitzler, Störck, Fieber, and others which tend to confirm my own observations.

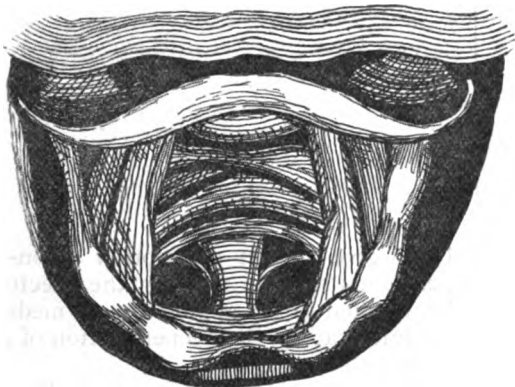


FIGURE 4.—Position of the larynx during the act of deep inspiration.

The advantages of the method I have described are as follows:

1. Cheapness of the instrument, which is simply a hard rubber tube.
2. The advantage of the continued effects of the remedy as the time between each application lasting five hours, until another is necessary, and then the patient can satisfactorily make it himself and thus keep up the remedial effects.
3. No cough or gagging is excited whatever, as compared with the use of the spray alone in making laryngeal application.
4. The quantity of fluid inhaled at each sitting is half to one ounce in from three to four minutes' time.
5. When applied to the larynx, trachea and bronchi no spasmodic contractions arise during its use whatsoever.
6. Irritating medicaments in solution can be thus applied without exciting much cough. I often use nitrate of silver, thirty grains to the ounce, iodine, tannic acid, peroxide of hydrogen of full strength without any trouble or bad effects.

My results in the treatment of (Störck's disease) or ozæna of the trachea, acute and chronic bronchitis, laryngitis, tracheitis, phthisis, etc., have given me such satisfaction that I bring this method before your notice.

For the want of more time I was compelled to shorten my paper.

Several drawings accompany this paper. Figure 1 demonstrates the exact position of the lips around the tube during the act of deep inspiration.

Figure 2 shows a Sass' glass downward pointing spray passed through the hard rubber tube, the spray points looking out at the opposite opening a quarter of an inch.

Figure 3 shows the tube.

Figure 4 illustrates the position that the vocal cords take during the act of deed-forced inspiration.

Tubes are made by Tiemann & Co., New York City.

83 2nd avenue, New York City.

MULTIPLE NEURITIS.

BY ARCHIBALD CHURCH, M.D.,

PROFESSOR OF NEUROLOGY IN THE CHICAGO POLICLINIC.

Case 1.—William A. V., aged 30 years, an unmarried bookkeeper of German descent, presented himself in my service at the Polyclinic April 17, 1890, complaining of numbness and weakness of both hands and of the left leg and foot. Physically he had always been in fair health but for years had drunk to great excess and had been subject to delirium tremens several times. He also used tobacco inordinately, smoking and chewing continually, and was greatly addicted to venery but gave no history or indication of venereal infection. Two weeks previously he first noticed the numbness and weakness mentioned. Coming on gradually it reached during the first week the stage shortly to be described. When first seen the patient was tremulous, uncertain in speech, with dilated pupils and the general manifestations of a prolonged debauch. At this particular time the critical illness of an uncle was making additional demands upon his strength, as he was compelled to watch with him day and night and had lost much sleep. He presented an irritable pulse of one hundred beats, a normal temperature, a fair digestion, an active bowel and was moderately well nourished. His attitude when standing was natural, but he walked with a decided limp, dragging the toe of the left foot, which was advanced and brought to the ground in an uncertain, dangling, flail-like manner, the muscles failing to properly control the ankle-joint. The anterior tibial group of muscles were found completely paralyzed and the other leg muscles weakened. On the anterior surface of the leg there

was a narrow, comparatively anæsthetic area about an inch and a half broad extending from the tibial tuberosity to the ankle. Upon the dorsum of the foot it spread out in a fan shape and embraced the four outer toes. Elsewhere on the lower extremities sensation was fairly normal to all ordinary tests. In the area described he had a subjective feeling of numbness, prickling and sometimes of steady pain. There was tenderness over the head of the fibula and on the dorsum of the foot. Light touches with a pencil or a bit of cotton wool could not be appreciated, but sensation to painful stimulus was not appreciably impaired or the ability to note broad variations in the temperature of objects brought into contact with the skin. The weakness of the foot extensors produced well-marked foot-drop so that the foot could not be voluntarily flexed to a right angle with his leg. The plantar patellar and peroneal reflexes were greatly diminished on this side. Electrical examination of the anterior tibial muscles showed that they had lost faradic excitability and only a very slight contraction could be elicited by the anodal closure of the galvanic current, thus indicating the presence of degenerative nerve changes.

In the upper extremities the grasp was greatly reduced and for the ulnar fingers almost abolished. Commencing near each elbow over the internal humoral condyle a markedly anæsthetic zone extended along the ulnar border of the forearm embracing exactly the distribution of the internal cutaneous nerve and in the hand the cutaneous distribution of the ulnar. This area was the seat of numbness and of burning sensations, which he described as like the feeling produced by long immersion of the parts in snow followed by exposure to heat. Sometimes there was steady aching and again sharp, darting pains. Over the course of the ulnar nerve marked tenderness to pressure existed. The inner group of forearm muscles reacted feebly to both galvanic and faradic stimulation, anodal and cathodal contractions being nearly equal. Such a degree of paresis was present that marked difficulty was encountered in all delicate or intricate use of the fingers such as buttoning clothing, writing, etc., and strong muscular effort with the hands was impossible.

A diagnosis of alcoholic multiple neuritis was made. Discontinuance of alcohol was firmly insisted upon and for a few days a combination of chloral and bromides was exhibited to control the nervous excitement under which he was laboring. Later massage locally with galvanism and tonics containing a little strychnia caused speedy physical improvement and a steady gain in the direction of the palsy, though some diminution in the bulk of the muscles on the inner side of the forearms appeared and the left anterior tibial group became much wasted. By June 20th, or two months after the first visit, the patient had prac-

tically regained the use of his hands, so that he had returned to his clerical employment, and sensation was much improved. In the leg there was still much weakness. In the erect position with the heel upon the floor he could barely raise his toe from the ground but walked without any noticeable limp. A complete and comparatively rapid recovery seemed promising, when the man fell into his old drinking habits and failed to attend the clinic.

Case 2.—Mrs. Mary C., an American widow of 58 years, with six healthy grown children, and who had never had a day's illness in her life, or even a headache, was attacked last April by the prevailing epidemic of influenza. The disorder ran a usual course but was followed within a week of its subsidence by stabbing, darting, burning and severe pains in all four extremities accompanied by great hyperæsthesia with intense itching and scalding sensations. The condition was severest in the hands and feet and did not extend much above the elbows and knees but peculiar sensations along the spine were described. She would complain that she must be lying on some lumpy object, and afterwards there was a sensation of a tumor in the thorax loosely attached to the spine which floated and bumped about as she moved in bed. The attending physician treated her for some weeks, and on numerous lines, but principally with rheumatism in mind. No relief was secured. The days were passed in agony and the nights in torture which morphine did not control. At the end of two weeks the hands and feet were powerless. Subsequently the case went into the hands of Dr. A. E. Hoadley, with whom I saw the patient July 10th last. At that time the severity of the attack had passed, but there was still great weakness of the hands and feet with painful hyperæsthesia. The bedding in contact with the affected area the patient described as feeling "wooly, coarse and like a bundle of rushes." Her stockings felt "as if made of coarse twine and full of knots." She was constantly rubbing and chafing her hands, but in a gentle way, for any pressure or roughness was intolerable. The grasp was greatly reduced and she could with difficulty stand upon her feet. The prickling, burning, itching sensations, though lessened, were hard to endure. The bowels which had been sluggish for many years, had been thoroughly flushed by daily copious injections and now small doses of morphine secured some rest at night, the first she had enjoyed for many weeks. Wrist, plantar and patellar reflexes were absent. There was tenderness over the nerves in the affected area. The finger nails were roughened, scaly and marked by transverse ridges. The skin about the nails and as far as the second phalangeal joints was shiny, red and atrophied. No muscular atrophy was apparent, but the legs were flabby and the forearms somewhat emaciated, pos-

sibly not more than the prolonged confinement to bed might explain.

Electrical examination was not made as a diagnosis of multiple neuritis seemed justified without it. The patient has steadily improved in all respects and is now walking about the house or even going to market, and able to be of some service to herself and her family. She still complains that her shoes seem full of nails and pebbles and her bed of switches, but a quarter or an eighth grain of morphine secures a fair night's rest and a modification of the distressing subjective troubles which with the paresis certainly, though slowly, are growing less. The constipated habit of this woman is notable in this connection. She states that all her life she has been remiss in attention to her bowels often allowing a week, ten days or even a fortnight to pass without securing a passage or even attempting it. This condition may have played an important part possibly in the etiology of the neuritis as it could furnish a general auto-infection or, if you will permit the expression, an auto-sewer gas poisoning, but in accordance with the opinion of foreign and American observers who have reported similar sequelæ of *la grippe*. I am inclined to assign a causal relation to the influenza.

Case 3.—James M., a married Irish teamster, of 50 years, presenting no family or personal history of any interest in this connection, was taken with the grippe Jan. 10th of this year, and was moderately ill for a few days. He recovered apparently, however, and went back to his work feeling comparatively well. On Jan. 18th he felt a weakness and stiffness in the left calf which was worse on the following day. On the third day the other leg was affected and two days afterward he could not stand at all. Weakness in hands and arms promptly appeared so that he could not use his knife and fork, dress himself or exercise any considerable muscular force. The face, tongue and head were in no wise and at no time affected or the control over the bladder and rectum. For another ten days he gradually grew worse but since that time has steadily improved. There was considerable tenderness in the extremities but no great pain and no disagreeable subjective sensations aside from the feeling of powerlessness. In June, at the request of Dr. D. J. Doherty, I first saw the patient and found the disease retreating. He could stand fairly well and with the aid of two canes could walk in a very feeble, uncertain way from one chair to another. The knee jerks, wrist and plantar reflexes were much diminished but undoubtedly present. There was some tenderness over the affected muscle groups and affected nerves, with tendency to wrist and foot drop. The hands showed greatly diminished power and the right hand and left foot were most affected. Later, repeated electrical examination showed diminished reaction to both forms of cur-

rent but no inversion of the galvanic formula, whilst there was perceptible shrinking of the flexor group of muscles on the right forearm, of the dorsal interossei of the right hand and of the anterior tibial group of the left leg. He is at the present time steadily gaining in every particular and the outlook is good for complete recovery within the next ten months. Little treatment has been employed, but he has had such rubbing and massage as he could give himself with the intelligent assistance of his family and plenty of faradic electricity also applied by himself, serving greatly to entertain him. In this case, as in Case 2, a prolonged search for every source of infection has been negative in result, unless *la grippe*, which suggestively preceded the neuritis be assigned as the cause, and this I am inclined to believe is the fact.

Case 4.—Mr. S., an unmarried merchant of 31 years, was referred to me March 31st, 1890, by Dr. Ferdinand Henrotin. Two months previously he had for a day or two felt a "queer bruised sensation" in the left thumb which passed away in a few days. Shortly afterwards he spent several weeks in Mexico, where he had a number of "chilly, creepy nights," could not keep warm with any amount of clothing, and such nights occurred irregularly up to the time he came under observation. A month before, after getting slightly chilled on a street car, there was numbness in the fingers of both hands which persisted without intermission and spread up the palms, more noticeably in the left hand. This strange feeling was intensified by rubbing, by cold or heat, and was described as the sensation produced by sharp clapping of the hands. Objective sensation was not noticeably impaired, but he found his fingers clumsy and that he could not button his collar or cuffs, without extreme difficulty, manœuvres which require at once much dexterity and some strength when the linen is stiffly laundered. In every other respect the patient seemed to be in perfect health and there was not the slightest indication of any infection, chemical or otherwise. Malaria was suspected, but persistent and careful exhibition of quinine in full doses produced no betterment. Electricity and massage gave no rapid improvement. The peculiar sensations, however, gradually diminished, but in August still persisted to a slight extent. At this time a number of doses of salicin were given for a furuncular outbreak and in forty-eight hours the nerve trouble disappeared and has not returned up to this writing (Oct., 1890). It is therefore possible that a rheumatic condition furnished the background for the very mild neuritis.

Other cases following typhoid fever might be given, and one in the person of a well-known surgeon, in which there was implication of the

musculo-spiral of the left arm, probably due to a pharyngeal abscess which had produced well-marked systemic infection. Such instances, however, fall under the observation of all.

The clinical recognition of the fact that certain palsies are due to alcohol, lead and diphtheria, is of sufficient antiquity, but a knowledge of the anatomy of these conditions is quite recent, and constitutes one of the notable advances in modern neurology. Under the term multiple neuritis have been grouped many forms of paralysis and neurotic derangement formerly most variously distributed, for if a spinal nerve be injured by traumatism or inflammation, such injury will be manifested almost solely by variations in its functional activity correlative to the amount, extent and nature of the morbid condition, and furnishing the widest variety of symptoms. In default of certain knowledge concerning such processes, these symptoms quite naturally were variously interpreted by different observers, with plenty of resulting confusion.

The ability of peripheral nerves to resist the extension of inflammation by contiguity must have attracted the attention of every one who has seen the lumbar plexus dissected by a psoas abscess; but, on the other hand, they are peculiarly susceptible to certain toxic and infective agents, circulating in the blood, which determine in them varying grades, and possibly kinds, of inflammatory action, with a tendency to spread centrifugally along their trajectory to the ultimate filaments. Upon examining nerves so implicated they will be found affected in two general ways: Either the phlogistic activity will be mainly confined to the proper nerve elements, the axis cylinder and the medullary sheath, or it will be interstitial, involving the endo- and peri-neurium; yet all variations between and embracing these extremes are to be encountered. Now as spinal nerves are motor and sensory, it results that variations between complete abolition of both these functions and the slightest impairment of either may result from a neuritis. But they also contain vaso-motor filaments, interference with the function of which gives rise to circulatory and trophic disturbances of greater or less importance. Consequently among the symptoms of this disease, as well remarked by Buzzard in his Harveian Lecture on this subject, "pain is sometimes present and sometimes absent, numbness may be slightly or strongly pronounced, muscular atrophy, which is sometimes conspicuous, may be entirely wanting, whilst the result of electrical examination may vary to a remarkable extent." Impairment of motion or muscular power, however, is in some degree always present. This may be accounted for on the ground that motion requires a more complicated nervous action than sensation—upon which, indeed, it mainly depends. In the lower orders of animal life sensation precedes motion,

and throughout the nervous system, as in other fields, the higher and more complicated or widely differentiated the function or apparatus, the more is it susceptible to derangement.

Formerly cases of multiple neuritis, when not attributable to alcohol, lead, diphtheria, gout or rheumatism, were thought to be of spinal origin and sometimes were described as acute ascending myelitis. In 1864 Dumesnil described a case of paralysis presenting lesions of the peripheral nerves upon post-mortem examination, and two years later a second similar instance. The next mention was made by Eichorst in 1876, followed by Joffroy in 1879, Leyden in 1880, Grainger Stewart in 1881 and in 1884 the accumulated information in regard to this condition was ably presented by Buzzard in the Harveian Lecture already mentioned.

The lesions are confined mainly to the ramifications of the nerves and, as a rule, are more pronounced the farther they are removed from the central apparatus. There is a well defined tendency to symmetry, so that both upper or both lower extremities are affected in the same manner. Rarely, and only in cases of long standing, indications of extension to the spinal cord are found. Wherever the affected nerve trunks are superficial or turn about bones they present an intensification of the process, which explains the painful points usually found in such localities. As before indicated, the inflammation has a centrifugal tendency, following the nerve to its ultimate distribution, and even destroying the terminal muscle plaques and other end organs in severe cases, with resulting atrophy of the parts to which they pertain. Practically and histologically the lesion, irrespective of the initial cause, does not vary in any material particular from the degeneration caused by nerve division, and in the progress of the disease regeneration takes an exactly similar course to that presented by divided nerves reunited after the occurrence of degenerative changes; that is to say, repair proceeds from above downward. Obersteiner and Gombault, however, insist that the degeneration due to lead and similar poisoning differs from the traumatic sort in the persistence of the axis cylinder in the peripheral segment.

The causes of multiple neuritis are legion. They are divided by Starr into four groups substantially as follows:

1. Toxic agents, including lead, alcohol, arsenic, bisulphide of carbon, illuminating gas and possibly phosphorus.
2. Infectious agents such as produce diphtheria, variola, typhus, typhoid, malaria, syphilis and tuberculosis. I would include the infection of epidemic influenza and septicæmia in its broadest sense.
3. An epidemic influence in many tropical countries causing an outbreak of multiple neuritis such

as is termed *kakké* in Japan, and *beri-beri* in India and Brazil.

4. Cases are attributable with more or less plausibility to gout, rheumatism, exposure to cold and over-exertion, while in some instances no cause can be assigned.

From these brief considerations it is to be readily seen that this disease may present many different clinical aspects. The most diverse symptoms are encountered, inasmuch as any loss of function or perversion of function attributable to spinal nerves may be the leading feature of an individual case. Subjectively the sensory symptoms, which are usually a pronounced feature, vary from slight numbness or strangeness of feeling to the most exquisite hyperæsthesia or absolute anæsthesia. Ordinarily certain areas will be anæsthetic to touch but extremely painful, constituting the *anæsthesia dolorosa* of the pedantic. Sensations of pins and needles, creeping, crawling, burning, tingling, and pains of a tearing, boring, twisting, even lightning-like character are the burden of the patient's incessant complaints. The hands and feet may become so sensitive that the weight of clothing, the contact of the hand, or even a breath of air cannot be tolerated. Over the affected area there is tenderness to pressure almost invariably, and this is greatest where the nerve trunk is readily accessible. There is often lessened ability to recognize temperatures in the affected parts, to locate tactile impressions or to distinguish degrees of pressure. The reflexes subserved by the nerves in question are diminished, or more usually make complete default, and this condition of even the knee-jerk in diphtheritic palsy of the ordinary pharyngeal form is a diagnostic sign of great weight (Gowers). Where the condition is due to alcohol and rarely to other causes, a peculiar mental state is noticed in which the moral sense is notably perverted. Such patients will detail with great particularity long experiences which are absurd and impossible upon their face, and their statements in regard to their own condition are quite unreliable.

As the great rule the distribution of the disease is strangely symmetrical, usually involving the lower extremities below the knees and the upper extremities below the elbows. Though no nerve is exempt, the musculo-spiral in the arm and the anterior tibial in the leg are ordinarily selected, causing wrist-drop and foot-drop by the motor paralysis which is one of the primary and most constant, as well as the most important symptoms. The development of paralysis may extend over a period of two or three days or as many months, usually commencing with feebleness in the legs and aching in the calves, followed shortly by implication of the upper limbs and attended by some or all of the sensory disturbances just mentioned. When the respiratory nerves are involved it constitutes a grave feature, and may rapidly lead to

a lethal termination. Depending upon the severity of the attack and the rapidity of its onset, trophic disturbances sooner or later appear. In the area of distribution of the affected nerves there may be profuse sweating, producing a milary or even bullous eruption and a macerated condition of the integument. The dystrophy is manifest in dryness of the skin with cuticular desquamation, falling of hairs, and roughness or even shedding of the nails. The fingers may present the peculiar erythematous, glossy skin characteristic of nerve injury, and mottling and flushing with alternate paleness of the parts is frequently noticed. The muscles are often flabby and plainly wasted. In uncomplicated cases the sphincters are never affected. Electrical examination may develop the reaction of degeneration, but ordinarily something short of the typical formula is found, and only the slightest modifications or none at all may be detected in mild cases, as is readily explained by considering the anatomical peculiarities of the disease.

Depending upon the severity of the individual case, its cause and the possibility of removing that cause, the course of the disease is from three to twenty months and, except nerves of vital importance are implicated, almost always terminates in recovery, which is usually preceded by a recurrence of the sensory disturbances as the nerves regenerate. In the later stages massage, donching and electrical exercise of the muscles to maintain nourishment and to prevent spastic or position deformity, are all of great value, but must be employed with intelligence and moderation. Any break in the integument must be carefully attended to, as healing is slow and a tendency to ulceration prominent.

It is probable that further study of this interesting but wide group of diseased conditions will result in establishing differential features of importance in classification, prognosis and treatment.

167 Dearborn St., Chicago.

SOME REMARKS ON THE RELIEF OF REMOTE NEUROSES, BY THE RESTORATION OF OCULAR EQUILIBRIUM.

BY FRANK ALLPORT, M.D.,

OF MINNEAPOLIS, MINN.

PROFESSOR OF CLINICAL OPHTHALMOLOGY AND OTOTOLOGY IN THE UNIVERSITY OF MINNESOTA.

The subject of ocular insufficiencies and over-sufficiencies appears to be one of those crazes that occasionally strike the medical profession with cyclonic force. Like cyclones, these crazes are unexpected in their attacks and frightfully devastating while they last. Their careers are short-lived, but they leave many aching hearts behind

to tell the story of over-credulous patients and over-zealous physicians.

We can learn but little, it is true, without experimentation, but in the name of suffering humanity, there should be some limit placed, beyond which the pitiless drug or knife of the medical man may not leave its mark.

What a multitude of mistakes must be laid to the demon of "reflex" action, who, like a fitful spirit, flits hither and thither in our human anatomy, and ever and anon lays his icy hand upon some one of our organs and claims it for his own. How quickly the medical profession grasps at the hint. Immediately a long chain of diseases is looked upon from a different standpoint. Women are ruthlessly laid upon the operating table and castrated. Children are circumcised; teeth are extracted and noses are cauterized. In short, the abiding place of "reflex neuroses" may be found in any organ of the body, and is liable to an invasion by ignorant zealots. Meanwhile the physician is in a hopeless state of bewilderment. The commonest diseases assume a mysterious appearance, and he fears the presence of the lurking "reflex" behind every muscle, nerve and tissue in the body. It matters not whether a patient complains of his eyes or not, clip, clip go the scissors, and his muscles are severed. It matters not if the child's prepuce utters a note of warning. Off it comes. It matters not whether the woman ever complains of her ovaries. Down she must lie and in a twinkling they are laid on the table beside her, and the surgeon imagines he has achieved a signal triumph, especially if he can show that he has made a great many such operations in a very short space of time.

Why do not physicians conscientiously narrate to us the ultimate results of these cases, upon which they base such wonderful reports? Because they are ashamed to do so! After they have tried them for a time, and the results are finally forced upon them, they simply quietly lay away their hobby and say nothing about their conclusions. But does it teach them a lesson? Unfortunately no! They are ready for the next visionary dream of some over-zealous enthusiast, and are soon deep in the mysteries of the latest "reflex." Where and when will this insane chasing of a will-of-the-wisp cease? How many of the crippled, the maimed, the halt and the blind must be arrayed before us like the ghosts of Richard's victims, before we are contented to inoculate our practice with a little common sense? The answer is as visionary as a "reflex neurosis." But it is to be hoped that the time is not far off; that the day of our salvation and the salvation of our patients is at hand.

One gleam of sunshine I have been able to extract from the general gloom, has helped me over many a dark place. It is this: Never attack an organ, unless that particular organ is causing dis-

tingent uneasiness. If an organ is diseased to an extent sufficient to warrant interference, it will usually make its pathological condition evident.

The latest candidate for the approbation of the medical man, is the influence exerted upon the nervous system by insufficiencies and oversufficiencies of the ocular muscles.

The subject of tenotomies for ocular insufficiencies is not a new one. But the subject of graduated tenotomies for ocular insufficiencies, and their effects upon the different organs of the body, is comparatively a new one. Tenotomies have, until recently, meant a complete cutting away of the tendons from the eyeball, and this has referred more particularly—almost exclusively, I may say, to insufficiencies of the internal recti muscles. To Dr. Stevens, of New York, is to be given the credit of having elaborated the subject of graduated tenotomies and advancements, for the relief of reflex and remote diseases, and of having called attention to other varieties of insufficiencies, besides those of the internal recti muscles. To Dr. Stevens must also be given the credit of having systematized this entire subject, and of having given us an exact and intelligent nomenclature. His methods of operating are of the very best, and are of such a nature as to make them valuable to every ophthalmologist. His instruments for operating are as near perfection as can be made, and his phorometer renders the detection of insufficiencies easy and systematic. His claims to cure headaches, head neuralgias, etc., will find sympathy, approbation and acquiescence from all ophthalmologists. But his claim to relieve general chorea, epilepsy, paralysis and other grave and remote neuroses by graduated tenotomies, is so extreme as to warrant the unfavorable verdict rendered by almost the entire profession. His claims were so broad, and his personal statistics so surprising, that it became necessary for the profession either to accept or reject the grounds upon which he stood. Therefore the New York Neurological Society determined to thoroughly and impartially investigate the subject. Accordingly in March, 1887, with the acquiescence of Dr. Stevens, a commission was appointed, consisting of Drs. Seguin, Starr, Birdsall, Moore, Webster, Dana and Foster (the two latter being appointed by Dr. Stevens himself), to consider the value of Dr. Stevens' treatment. This commission was not compelled to bring in a report at any specified date. This was left to themselves. They were requested to bring in their report whenever they had arrived at a conclusion. They were merely asked to consider the subjects of chorea and epilepsy, these being the subjects upon which Dr. Stevens laid the greatest stress, and in which he claims (without, however, substantiating his claims by intelligent statistics) to cure 50 per cent. of all cases submitted to his charge. A preconceived plan was agreed upon that was

undoubtedly fair to all, by which patients were placed under Dr. Stevens' care, and observations of progress taken from time to time. This plan appears to have been carried out honestly by the members of the commission, although claims to the contrary were advanced by Dr. Stevens. The total number of cases sent to Dr. Stevens for treatment was 28; 23 were epileptics; 5 cases of chronic chorea, and all had some form of insufficiency. Fourteen of these cases withdrew for various causes: 5 were unable to attend regularly; 2 were declined by Dr. Stevens because of organic disease; 5 were withdrawn by mutual consent of the members of the commission sending the cases and Dr. Stevens, for satisfactory reasons, such as non-attendance, etc. Three were discontinued because they grew worse instead of better under the treatment; hence only 14 remained and became available for observation. These cases were under treatment for periods varying from several weeks to thirty months, and the result showed that no cases were cured. One case was much improved, 5 cases improved, 7 cases unimproved, and the result in one case was unknown. From these results it will be seen that six cases were claimed to be improved; three of these cases were from Dr. Stevens' own private practice, and no exact notes of their previous condition were available. In five cases the improvement was very slight; the sixth case was an epileptic who did about as well under Dr. Stevens' treatment as under the bromide treatment. Some of the patients were made worse instead of better, and in some diplopia and vertigo were developed.

Such in brief was the result of the commission appointed in March, 1887, and which reported in November, 1889. Their labors appear to have been carried on in a spirit of honesty and fairness. They declare that inasmuch as Dr. Stevens has utterly failed to achieve the great results he claimed, this method of treatment is not worthy to be classed among the principal agents for the cure of chorea and epilepsy. This appears to have been agreed to by even those members of the commission selected by Dr. Stevens himself; Dr. Dana (one of Dr. Stevens' friends), even going so far as to say, that while when he entered the commission he was prejudiced in favor of this method of treatment, the result of his observations had been to make him lose faith in its efficiency. One remarkable fact is, that Dr. Stevens reports to have cured 50 per cent. of the cases of epilepsy and chorea submitted to him in his own private practice. He further claims that the cures materialized promptly; but the commission reports that no cases were cured, and there were practically only three cases that made even doubtful improvement, and the course of improvement in them all was protracted.

The fact of the matter is, Dr. Stevens appears to be enthusiastic and very zealous in his investi-

gation of this subject, and has arrived at a point where he claims too much and where his claims have no reasonable hope of being sustained by a fair and impartial examination. If he merely advocated the use of this remedy for headaches, head neuralgias, etc., he would have many endorsers, but, as it now stands the breadth of his claims is only equaled by the members of the profession who are his open antagonists. Notwithstanding the fact that the commission was appointed with the acquiescence of Dr. Stevens, and that the commission and Dr. Stevens labored together for a period involving two and one-half years, Dr. Stevens, at the meeting in November, 1889, brings in a protest against the reception of this report by the Society. If he did not wish to work with the commission he should have said so at the start; if he wished to object to the method in which the commission was prosecuting its labors he had ample opportunity to do so. But he accepted the cases that were sent to him (with the exception of the fourteen that were rejected), and treated them presumably to the best of his ability, and it would seem as if he should stand by the results. He even has the poor taste to vent his spleen by unjust and personal allusions to the members of the commission, and it is gratifying to learn that such allusions were passed by in dignified silence by the Society, the personal character of the members of the commission being sufficient guarantee against bigoted animosity cutting any figure in its labors. It appears to me that if such neuroses are dependent upon a lack of ocular equilibrium, Dr. Stevens, with the immense labor that he has put upon the subject, the undoubted information he has acquired, and the great skill that he unquestionably possesses, should be able to achieve exact results, and that successful operations, directed against these conditions, should be positive and rapid in their consequences and not protracted and unsuccessful.

For my part I have little faith in graduated tenotomies. I believe that if a muscle is worth tenotomizing at all, the operation should be complete, and that an absolute separation of the tendon from the eyeball should be brought about. In Dr. Stevens' method the tendon is picked up by a pair of fine forceps and the middle fibres are cut, leaving the two lateral margins of the tendon intact; this looks well in theory, but according to my observation does not materialize in practice. The fibres that are cut are supposed to fall back and become attached to the globe at another point. I do not believe that this is the case. I believe that the fibres fall back during the operation, but in a short time thereafter, in the course of healing and cicatrization, the fibres pull back to their original place of attachment. This statement I have repeatedly verified by observations upon the human being and animals, by first making graduated tenotomies, and, after a while, re-

opening the conjunctiva and carefully observing the condition of affairs. Dr. Stevens himself, I understand, sometimes finds it necessary to repeat this operation from fifteen to twenty times on a single person. If this is the case, and some of his cases are under observation for two and one-half years without achieving decided results, it would appear to me that the operation should be condemned and a search made for some new remedy. I believe there is a great deal of nonsense in the subject of ocular insufficiencies and tenotomies, when presented in its most favorable aspect, and it appears to me that almost all of the hundreds of cases that I have examined by Dr. Stevens' phorometer have had some varieties of muscular insufficiency. To summarize then: I believe that errors of refraction and ocular insufficiencies are a fruitful source of headaches, head neuralgia and other neuroses, situated in and about the eyes and head. I believe that such diseases can be remedied by the proper adjustment of glasses and by proper tenotomies. But I do not believe that chorea, epilepsy and other remote neuroses are produced by errors of refraction or by muscular insufficiencies, except as such abnormalities indirectly cause an impairment of the general health, which might in its turn present a favorable soil for the growth of the various neuroses. I have but little faith in graduated tenotomies, and believe that if a tenotomy is indicated at all, the complete operation is necessary.

THE CLINIC.

A CASE OF NEPHRORRHAPHY.

A Clinical Lecture delivered at the Jefferson Medical College, Philadelphia.

BY W. W. KEEN, M.D.,
PROFESSOR OF SURGERY.

The case I shall show you to-day is rare. It is a case of floating kidney, and I propose to sew it fast to the loin. The patient is a young woman, 31 years old, who was brought to me by Dr. Coleman. Her history is briefly this: Five years ago, while reaching for a package of goods upon a high shelf, she suddenly felt something give way in the right lumbar region and also, as she clearly remembers, heard a distinct snap. She almost fell from the weakness caused by the shock, the package fell to the floor, and she was unable to lift it again because of the pain induced by the effort. From that time to this she has always felt it a labor to lift even comparatively light weights, because of pain in the region of the right kidney, shooting into the groin and thigh of that side. For the last three years she has been practically an invalid. With this there has been at times disturbance of the urinary function, the urine now and then becoming scanty and high

colored, but never, as far as observed, containing albumen. Beside this there have been occasionally very marked digestive disturbances, such as diarrhoea, nausea and anorexia. Menstruation is affected but little, but she has thought that at such times and occasionally during the intervals there has been some enlargement of the tumor, which made its appearance after her accident five years ago. If she lies upon her left side, this lump falls with a "thud" to a lower position upon the left side of the abdomen. At the internal border of the tumor I can distinctly feel the pulsation of a large artery, presumably the renal. By a slight manipulation the mass can be pressed forward, and it then falls below the umbilicus and to the left of the middle line. It is like a ship at anchor which swings with the tide to the limit of its hawser. The size of the tumor corresponds to that of the kidney. Its shape is approximately renal but the hilum cannot be distinctly made out. Again, percussion over the right renal region gives a certain amount of resonance, not perfectly clear, but distinctly different from that upon the left side; and there is also a sense of diminished resistance. My colleagues, Profs. Brinton and Parvin, have examined the patient and concurred in my diagnosis.

The kidney is subject to two forms of mobility, which should be carefully distinguished: 1. The moveable kidney, which, while surrounded by its fatty envelope, is to a certain extent moveable in the space behind the peritoneum; 2. The floating kidney, which is provided with a more or less complete meso-nephron, that is a reflexion of peritoneum analogous to the mesentery and mesocolon. A simple moveable kidney may become in time a floating kidney by gradually pushing before it a process of the peritoneum, as does the testis in its descent. Mr. J. Grieg Smith says that the condition is always congenital, but I cannot believe this, for in almost all cases that we see there is a clear history of recent discovery of the tumor, and in very many of an accident to which it is reasonably attributed.

If a patient come to you with such a trouble, what are the means of diagnosis? In nine cases out of ten the patient is a woman, and in nine cases out of ten it is on the right side. Rarely it is the left kidney, and still more rarely both are moveable. Occasionally the patient is a man, moreover, you will find a tumor that can be freely pressed into various regions such as the loin, the umbilical or hypogastric region; you may be able to make out the kidney shape and feel the hilum and possibly the renal artery pulsating, as I can distinctly feel in this case. You will then examine the loin by percussion and by bimanual palpation. But these tests may lead you to a false diagnosis. Three of us have examined this case with care and are reasonably sure of our conclusions; but it is possible we may have mistaken

for a moveable or floating kidney a tumor of the ovary, a uterine myoma with a long pedicle, an omental tumor, a tumor of the pancreas, or even a mass of impacted feces, and it may be that the facts will not bear out our opinion. If this be the case, I shall close the lumbar wound and immediately do a laparotomy, for there is in this case also in Douglas' pouch a prolapsed and painful ovary, which undoubtedly causes much of her suffering. Even if there is a floating kidney, a later laparotomy may be required to extirpate the ovary.

In most cases, if there are no symptoms, let the patient alone, or be satisfied to apply an appropriate bandage and pad.

Dr. Thompson S. Westcott has lately investigated for me the literature of this operation, nephrorrhaphy, and he finds there are recorded over a hundred operations with only two or three deaths.¹ One of these fatal results occurred in a case operated upon by Ceccherelli, and can be directly charged to the operation, as sutures were carried around the twelfth rib and the pleura was opened, the patient dying of pleurisy within three days. Hahn, of Berlin, reports one fatal case in twenty of his own operations. Mr. Lawson Tait has performed the operation three times, and, contrary to the testimony of all other surgeons, condemns it as useless. One of his patients died long after leaving his care, as he believed from suppuration due to the operation. To allow a floating kidney to remain without operation is by no means devoid of danger. The kidney which I showed you last week, removed from a case of hydronephrosis with abdominal urinary fistula, I believe to have been originally a floating kidney in which hydronephrosis was developed. Besides this not infrequent result, a floating kidney, as you see by this case, is a source of constant discomfort and ill health in many cases. If you find the physical signs are those of a large cyst of the kidney, the organ should be removed.

Shall I here perform a nephrectomy? This operation has been done a number of times for floating kidney and I think most unjustifiably. Nephrectomy for a floating kidney otherwise healthy is entirely unjustifiable. Nephrorrhaphy should always first be attempted. If the operation is unsuccessful and the health is still impaired, then, and then only, should the far more dangerous operation of nephrectomy be done. The patient is placed upon her left side with a good-sized pillow under the lower ribs, so as to increase the space between the twelfth rib and the crest of the ilium on the right side. The incision is midway between the last rib and the iliac crest over the edge of the quadratus lumborum, the same incision as is usually made for nephrectomy or colotomy. I shall cut down until I expose the transversalis fascia at the edge of the quadratus, and then by

opening the fascia I shall come directly upon the perinephric fat, which I shall then tear. I shall use silk sutures as catgut is too quickly absorbed. The question how I shall pass the sutures is important. Hahn, of Berlin, who proposed and first practiced this operation in 1881, at first passed his sutures only through the perinephric fat, and partial failure resulted in at least one of his cases. Again it has been recommended to pass the sutures through the fibrous capsule of the kidney, but this is very liable to tear, and failure has occurred after this procedure. I propose to pass my needle, as I have done in two other cases with admirable success, through the substance of the kidney itself and sew the organ fast to the lumbar aponeurosis, and then leave the wound open to granulate and thus insure a strong broad cicatrix. I would speak particularly of the importance of not pressing back the kidney into place until you are ready to grasp it; for in my last case, having found the organ and entrusted it to an assistant to hold in place, I cut down and came upon what I had every reason to believe was the kidney, but in reality was the liver, which lies close above the wound. The kidney had slipped out of place. The peritoneum was of course opened. I finally hooked up the kidney and made it do duty in closing the peritoneal wound. The case did perfectly well. I saw the patient a few days ago in perfect health, and she expressed herself as delighted with the result. It is surprising how rapidly the wound in the loin closes. In the last case referred to I put in several loose stitches intending to tighten them the next day, and I was surprised to find at the first dressing in twenty-four hours an even surface and the wound nearly closed.

I am now down to the perinephric fat, which I open, and in the light of the previous case to which I have just referred, it is important to know how to distinguish kidney from liver. I have thought over this not a little. The point usually made is that the liver moves with the diaphragm in respiration, while the kidney is fixed. But in these cases where the kidney has such excessive mobility, this rule is useless. Sometimes you can get your finger around and feel the whole contour, and especially the upper border of the kidney; but in my last case the kidney was in the pelvis. The color may give you some help. The kidney is dark-bluish in color, while the liver is more of a dark mahogany red. Manipulation will displace a floating kidney but not the liver. I shall now proceed to tear through the perinephric fat. The condition of mobility has been said to be due to absorption of the perinephric fat, but in this and my two preceding cases I have found no deficiency of fat. This operation is much more difficult than exposing a normally placed kidney. The mobility of this kidney is in marked contrast to the slow rhythmic

¹ *Annals of Surgery*, August, 1890.

respiratory movement of the liver, which I can now perceive through the peritoneum. The kidney slips suddenly out of sight and reach, and I can bring it back to view by guiding the abdominal tumor, so that I have no doubt of having the kidney. I now harpoon it by a tenaculum, draw it into view and hold it securely with a volsella. The movement of my fingers round the organ, instead of doing harm will do good, for it will excite some inflammation that will help further to fasten it in place. I now examine to find out whether the kidney is healthy or not. No disease is apparent to sight or touch, hence I shall not remove it. Now for the sutures. I take a half curved needle threaded with sterilized silk thread, and pass the stitch through both edges of the upper angle of the wound in the fascia and in passing from one edge to the other through the kidney substance about half an inch deep. Another is passed in a similar way at the lower angle, and four additional stitches, two anteriorly and two posteriorly, through only one lip of the wound and then through the parenchyma of the kidney, complete the fastening. Each stitch is followed by a little bleeding—surprisingly little. I shall put in two stitches through the edges of the large wound to tighten up to-morrow if I so desire, but I shall leave the wound open so as to get a good thickness of cicatricial tissue, just as I would do in case of radical cure of hernia.

[NOTE.—The patient's temperature only rose 0.2° after the operation, and except considerable pain in the right groin and hip, she made an excellent recovery from the operation. The permanent result can only be known at least a year later.]

MEDICAL PROGRESS.

ELECTRO-PUNCTURE OF AN AORTIC ANEURISM.
—TILLMANNS presented to the German Surgical Congress (*Centralblatt für Chirurgie*) a patient upon whom this operation had been performed. The aneurism appeared in 1885, but grew rapidly after the patient lifted a heavy weight in 1888. He complained of dizziness, anxiety, palpitation, sleeplessness, and especially of a severe pain under the right shoulder blade, and in the right arm. A small soft, pulsating tumor presented itself in the second intercostal space at the right border of the sternum. From April 17 to July 9, thirteen electro-punctures were made, under strict antiseptic precautions and with local anaesthesia, a long steel needle connected with the positive pole was carried about 5 centimetres into the sac, while the positive pole, connected with an ordinary metal electrode, was placed upon the surface near the tumor. Each sitting lasted from five to ten minutes, with a current strength of from 10 to

20 milliampères. If the current is too great (30 milliampères) the needle may become heated, and so burn the skin, which should, if possible, be avoided. To prevent pain and carefully regulate the current, a water rheostat should be placed in the current. After each application the patient was placed in bed and an ice bladder applied over the tumor. After the eighth puncture the patient was allowed to return to his home; with the thirteenth the treatment ended. The results were excellent, and nearly two years after the operation the patient reported that all subjective trouble had disappeared. The pulsating tumor of the breast, covered with thin skin, has grown firmer and shrunken, and can now scarcely be seen. He is not completely cured, however, as deep pulsation can still be felt.

Tillmanns has employed electro-puncture in a second case, with an aneurism the size of a man's head. Some time after the sixth puncture the patient died from rupture of the sac. Here, as in the other case, improvement was noted from the punctures, the outer portion of the tumor becoming firmer.

In these cases the literature teaches that a cure is only rarely reached by electro-puncture, though results are more favorable the earlier the treatment is begun—commonly, however, it is only palliative, and often useless.

THE GALVANO-CAUTERY IN PURULENT OPHTHALMIA.—Purulent ophthalmia, when seen sufficiently early and before any ulceration of the cornea has had time to develop, will generally give way before the usual lotions and mild cauterization with nitrate of silver. The outlook may, however, be different when these cases are seen late, and when more or less extensive ulceration of the cornea has been set up; for their vision may be seriously threatened, if even the organ should escape total destruction. It is in such cases as these that M. ABADIE has reaped admirable results from the use of the galvano-cautery. For instance, a lad of 20 came amongst the out-patients with his eyes in a lamentable condition, the result of gonorrhoeal contagion. There was a history of three weeks' duration of this state of things. Both corneae were extensively ulcerated, and so deeply that the anterior chambers were invaded, while even the iris had not escaped, but was infiltrated, and had the appearance of being covered with a greyish membrane. The conjunctivæ and eyelids generally were so involved that it was with difficulty the latter could be everted. The case being considered desperate, it was deemed useless to pursue the routine treatment. Rapid arrest of the destructive process was attempted by means of the galvano-cautery, which was freely applied to the suppurating surfaces, while the milder cauterization by silver nitrate was repeated twice daily. Eserine drops as well as iodoform

insufflations were from time to time had recourse to, while boric acid lotions were frequently applied. This was the sum of the treatment which was vigorously kept going for five consecutive days. At the end of this time quite a transformation was effected. The eyelids could be opened freely, the sclerotic was assuming a normal aspect, while the corneal defect was being rapidly repaired and the anterior chamber closed in. Then after three months of further application of spray douches, the two corneæ had become so far transparent that a double iridectomy was undertaken, after recovery from which the patient was able to read average print, and has since resumed his occupation of stone-mason. Another case was that of a man 58 years of age, who contracted a purulent ophthalmia which owned a similar cause to the foregoing, but who presented himself the third day afterwards for advice. He was ordered the silver nitrate treatment for eight days, at the end of which time his eyes appeared out of danger. Milder lotions were substituted, but the patient, feeling himself, as he thought, altogether cured, was remiss in his attention to instructions, with the result that the whole mischief was rekindled, if anything more intensely than before, for the discharge became very abundant. This time, however, the application of silver nitrate was powerless to prevent the development of an extensive corneal ulceration, which progressed with such rapidity that the urgency for more energetic measures was evident if the cornea was to be saved from destruction. The galvano-cautery was therefore applied for four days in succession, while the nitrate of silver and iodoform applications were kept up as in the previous case. Es-erine was not used, as the anterior chamber was not here involved. In six days the ulceration was no longer visible. The patient is still under observation and the douche treatment. The cornea, which was saved from perforation, is opaque at the borders, but the centre is perfectly transparent, and vision is relatively good. The advantages of the galvano-cautery have already been shown in the treatment of perforating ulcers with hypopyon. The method of Sæmisch may be with advantage replaced by the cauterization of the ulcerated surface by penetrating with the galvano-cautery through the centre of the ulcer to the anterior chamber, and thereby readily liberating the hypopyon. In conclusion, it is claimed for the galvano-cautery, combined with the application of a 2 to 3 per cent. solution of silver nitrate, that it is quite possible to cure all forms of purulent ophthalmia, whatever may be their gravity, and that even in cases where the cornea may be seriously involved, and where, under older views and methods, it would be deemed as irrevocably lost.—*Lancet*.

A NEW DISEASE OF THE BREAST.—SCHIM-

MELBUSCH (*Centralblatt für Chirurgie*) speaks of a peculiar disease of the female breast, that has been as yet but little observed in Germany. The disease has been described in France by Reclus under the name *maladie kystique*, and by Rorsnig in Denmark as *multiple cysten*. Von Bergmann during the past year has seen three cases of this kind. In all of them both breasts were equally affected, the skin over them was movable, but the gland tissue proper presented a number of hardened masses that felt exactly like small stones contained in a sack. Anatomically these masses are found to be hardened gland tissue that has undergone cystic degeneration. The tumor is a cyst-adenoma; the acini soften, become cystic, and by confluence present larger spaces. The tumor is purely epithelial, and presents a very different condition from that in cysto-sarcoma and chronic mastitis, in which the interstitial tissue plays the principal part.

AMOEBOID MOVEMENTS IN THE RED BLOOD CORPUSCLES OF ANÆMIC PERSONS.—BROWICZ (*Centralblatt für Klin. Med.*) claims to have discovered striking movements in the blood of anæmic patients. He has observed the phenomena so far in four cases: one of pernicious and one of simple anæmia, a third of septicæmia, and a fourth case of cancerous cachexia. The blood was observed in a fresh state upon a simple glass slide, and under an ordinary cover-glass. No special arrangements were needed for keeping the blood warm, as the movements would continue for hours, if the preparation was not allowed to dry. A power of 600 diameters was used.

It seems that Hayem has observed similar movements, but referred them to some parasitic infection of the blood, but Browicz regards them as a sort of Brownian movement, dependent upon some change in the chemical structure of corpuscles or plasma. That this explanation is probably correct he infers from the fact that the movements often continue for days, at an ordinary temperature, and long after the white corpuscles in the same preparation are lifeless. This he holds to be inconsistent with the known range of vital action in protoplasm.

EARLY DIAGNOSIS OF CANCER OF THE UTERUS.

—DR. T. A. REAMY, in a recent clinical lecture, spoke very interestingly on the subject of the "Early Diagnosis of Cancer of the Uterus." He said: I have had exceptional cases at 22 and 23 years of age, but if the patient is beyond 30, or if she has had children or miscarriages, insist on an examination, and see if she may not have carcinoma in the first degree. Hæmorrhage and wasting discharge are the early symptoms. Do not wait for pain and the characteristic odor, the cachexia or pallor. Do not wait especially for odor and pain. Make a digital examination.

You can generally detect a roughness or breaking down of tissue, and then a visual examination by the speculum should be made. We may find ectropion and may be degeneration, and think we have cancer, when we have not. If, in operating for a lacerated cervix, we find suspicious looking tissue, cut it away, for if the tissue is not an epithelial growth it is next door to it, and should come away. The importance of the early diagnosis of cancer of the uterus, is emphasized by the fact that two-thirds of my 150 cases per annum, which come under my care, have advanced so far, one-half of them even before they come under the care of the family physician, as to make a possible cure by operative proceedings very doubtful. Why is the early diagnosis of this disease so frequent? For the reason that the real cause of cancer is not known. It is, nevertheless, true that with the exception of one single authority of prominence, Sir James Paget, so far as I am acquainted with the opinions of authors, all agree in the belief that cancer is primarily a local disease. There is very probable predisposition in constitutions, tissue inheritance, yet the consensus of opinion is that cancer is a local disease.

The early diagnosis of cancer is one of the most important points in the practice of our art. Its importance cannot be overestimated. If we are to do anything we can do it with so much more hope of success if done early. Many of the cases met in hospital practice are so far advanced in the disease before they seek the advice of the surgeon, and the operation is consequently more extensive and attended by more danger than if an early diagnosis had been made and surgical treatment employed. He had been on duty at the Good Samaritan Hospital for eighteen years, and the number of cases which came to him there early enough was very small indeed. Medical treatment amounts to nothing. Surgical treatment if employed early may save, so hence this is the only treatment worthy of consideration. This woman gives a history of prolonged menstruation. Whenever a woman comes to you between the ages of 35 and 50 years, and tells you that she is menstruating too freely, too long, or at intermenstrual periods, do not give way to the popular opinion that the woman is suffering from the change of life. The irregularity in menstruation, which signals the approach of the menopause, is that the woman will miss a period or two and not have too frequent or excessive menstruation. This woman menstruated too freely, then had an occasional show at intermenstrual period.

It cannot be said that much progress has been made during the past forty years as regards the recognition of fully developed cancer. Bennett's monograph on "Cancerous and Canceroid Growths," published in 1849, shows a pretty

thorough knowledge of the subject under consideration. He says: "The microscope alone, and independently of all other kinds of observation, can seldom determine the presence or absence of cancer." With regard to the microscopical diagnosis of cancer, we have not improved very much over Bennett. This distinguished author was also well up on other points for his day. He says, in regard to the local origin of cancer: "A cancerous growth is for some time purely local. In this indolent state a tumor may often be exercised and permanently eradicated. Even when the growth has become moderately cancerous, ablation is said to have been occasionally followed by success." "There was a time," says this author, "when phthisis was thought to be necessarily fatal. Morbid anatomy has expelled that error, as it will doubtless do regarding cancer."

At the present time, however, surgeons generally unite careful microscopical examination of the structures in a suspected case with the clinical study and microscopical appearances, thus recognizing the malignant character of tumors much earlier than formerly. Here lies one of the most important advances. It points the way to extirpation of the growth in its earlier stages, while it is yet local; thus largely increasing the chances of cure. Virchow's experience with the Emperor Frederick shows how difficult it is sometimes for the most experienced pathologist to give a positive opinion regarding the malignancy of a growth, especially when so located as to permit of the removal of a very small portion for microscopical examination. However, our knowledge of cancer, especially cancer of the uterus and the breast, has been much extended during the past ten years. Surgeons have also learned to distinguish more accurately operable and inoperable cases, and thus save the patient from severe, useless, and dangerous operations. These conservative results, derived from our knowledge, are next in importance to the cure of disease by early operation. It is no small matter to save a surgeon from a surgical operation which could do no good. The benign affections of the cervix uteri which may be confounded with the malignant are chronic inflammation, endometrial inflammation with its results, erosions, granular degenerations, ectropium. — Cincinnati Letter, *Times and Register*.

TREATMENT OF TUBERCULAR JOINTS AND ABSCESSSES BY INJECTIONS OF IODOFORM. — BRUNS, before the German Surgical Congress (*Centralblatt für Chirurgie*), recommended the injection of iodoform into cold abscess and tubercular joints. The foundation of the treatment, he thought, lay in the known power of iodoform over tubercular granulations. The iodoform was used in the form of an emulsion in glycerine or olive oil, one

part to ten or twenty. The preparation is carefully sterilized before each injection. After weeks or months the abscess becomes smaller, and in from two to four months completely disappears. In Brun's clinic one hundred cold abscesses have been treated in this manner, and 80 per cent. have been cured. Of these, ten have been cases of burrowing abscess from caries of the vertebrae, in which a permanent cure resulted, so that Brun believes that the caries itself has been healed. The treatment is also recommended in tubercular empyema.

Similar good results were obtained in the treatment of tubercular joint affections, as the writer demonstrated in over fifty cases. In parenchymatous synovitis or capsular fungus, a hollow needle is passed into the joint and from one-half to three drachms of the emulsion forcibly injected. If the abscess is in the neighborhood of, or has broken into a joint, then the cavities should be emptied and so much of the emulsion injected as will just distend the abscess cavity or the joint. Fixation of the joint is only necessary when considerable pain has been caused by the injection; the rule is that it subsides rapidly, and the patient may be allowed carefully to use the joint. The parenchymatous injections should be made as often as once in eight days, while in the cases of enlarged joint cavity, or peri-articular abscess, each two to four weeks is sufficient. The first sign of improvement—lessening of the pain—is not to be looked for under six or eight weeks, the swelling decreases after the first injection and at last completely disappears. Peri-articular abscesses shrink to small knots that cause no further trouble. Motion in the joint may be partially, or indeed, fully restored. In severe cases and old people, a complete recovery is not to be looked for, though here we can expect a diminution of pain, swelling and improved use. The author recommends the operation because of its simplicity, adaptability, results, and freedom from danger.

In the discussion Heusner said that in the past four or five years he had treated numerous cases in this way, with excellent results. He specially mentioned a woman with tuberculosis of the wrist joint which was cured by ten injections.

Trendelenburg had treated 135 cases in this way. Results were various, but in 68 per cent. of the cases it could be said to have had a marked influence upon the disease, though cure was not an invariable result. The wrist seemed favorably affected more frequently than other joints. He also used the method in tuberculosis of the soft parts, lymphatic glands, testicles, etc. Several injections into the lungs had also been made.

Riedel enquired what relation a sequestrum had to the treatment. He was answered by Krause that frequently spondylitis healed under this treatment, notwithstanding the presence of

a sequestrum. Heusner said that in the cured cases no changes remained, while in those that were not affected the disease remained as it was before treatment. The case of the woman with the tuberculous wrist had originally been set down for amputation.

THE USE OF HYPODERMIC INJECTIONS OF CAFFEINE IN THE TREATMENT OF POST-PARTUM HÆMORRHAGE.—DR. MISRACHI highly recommends the use of injections of caffeine in cases of post-partum hæmorrhages where rapid assistance is necessary, and especially when the physician first reaches the case after there has been already considerable hæmorrhage (*Centralblatt für Gynäkologie*, No. 27, 1890). Especially in country practice this remedy may be of great value, particularly as it is possible for the physician to have under his care cases of diphtheria or erysipelas, and to have been unable to produce such complete disinfection as would warrant the insertion of the hand. According to the author, caffeine acts more rapidly than ergot, and produces a more effective result even than ether, although the latter is a more rapid stimulant. He administered it in the form of a solution, of which a hypodermic syringe would contain four grains of caffeine, and gave three or four injections at once,—in other words, injects hypodermically about sixteen grains of caffeine. He employs caffeine, rendered soluble by the benzoate of sodium, equal parts of each being dissolved in warm water. The author claims that this remedy so employed produces most remarkable results in arresting bleeding and in acting as a stimulant, and that, therefore, benzoate of sodium and caffeine in small packets should always be carried by country practitioners.—*Therapeutical Gazette*.

THE FLAGELLA OF BACTERIA.—LÖFFLER (*Centralblatt für Bakteriologie*) has succeeded in obtaining a special stain for flagella. He employs a special mordant after attaching the bacteria to a cover-glass by drying. The mordant fixes the coloring matters, fuchsin or methylriolett, in these extremely delicate structures. He has found that the bacillus of cholera and many other forms have but a single flagellum, while a large number are bunched at the end of the spirilla and the micrococcus agilis. Some are not found at the end of the bacillus, but seem to pass out from all parts of the body, as was found in the case of the typhoid bacillus. The number of these structures varied greatly in the same species, from which the writer concludes that they are very delicate, and easily washed away.

PLENCKII's solution for cauterizing condylomata: Hydrarg. chlor. corros., aluminis, cerussæ, camphoræ, alcohol, aceti vini, equal parts.

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SATURDAY, NOVEMBER 1, 1890.

KOCH, VIRCHOW AND TAIT.

At the Tenth International Congress, when the great bacteriologist appeared amid salvos of applause, it was said that the spirit of skepticism seemed also to be there to mock his arguments. There was likewise a consciousness that the controversy of the age was looming up, but that so far it had been only one-sided. None, however, were present who doubted the sincerity of the new prophet, who was there to acquit himself not without honor even in his own country. He may not quite have come up to the expectation of presenting an infinity of unknown truth, but he could not justly be said to have failed in his logic, even though disposed to prove too much. There was no dearth of illustration and no poverty of facts. Against KOCH was VIRCHOW, the biological champion, startled, perhaps nettled, yet still generous, but not to the verge of abandonment of long cherished doctrines. From without there also came an echo from MR. LAWSON TAIT, surgeon and controversialist, that if ever he got together enough bacteria to make a poultice, he would slap it on the next wound he had to dress. Tait cares nothing for glamor, or we might hesitate to credit this statement as having been made in all soberness.

All these are workers of honorable purpose and dauntless spirit, who have made additions to our knowledge, and despite their over-zeal have deserved well of their generation. Each one of them has furnished aids to diagnosis and suggested many approaches to perfection in hygiene.

LISTER, too, with his practical mind, has at the very least taught us the necessity of attention to the details of cleanliness. His methods, now much simpler, may at first have been overloaded with ceremony, but this may have been essential for the enforcement of his doctrine. Nature, at all events, has been given a clearer field.

It is quite in keeping with our mental requirements that in studying species with their environments, we desire to be informed of their offices. To succeed in this we must dwell in the microcosm itself, just as in the greater world, we learn the flora by frequent excursions. Difficulties particularly beset the microscopist, bewildered as he is by numbers and limited to the study of forces, rather than of functions. He subconsciously deals with analogies, and drifts to insufficient conclusions by reason of marshalling his facts in a one-sided way. All minds, however, have this temptation.

Now, how stands the question? Many investigators are at work along other lines than those adopted by Koch, mainly in the search after the various microbes to be found in the healthy mucous cavities. BESSER, of Vienna, and STERNBERG, of our own country, have discovered many duplicates in the respiratory surfaces, quite enough to establish the ubiquity of these unseen enemies. But of course this is no argument in favor of their harmlessness, since their power is resident in their multitude, not venomous *per se*, but generators of other poisons. These forms follow the same law as the animal cell, both, according to Virchow, being to the other implacable foes, in that their immunity from extinction is due to their rapid, vigorous and constant reduplication. The conflict is likely to be eternal, and no culture-field is to be barren of its proper verdure. May we not as well state it at once, that as in the movement of nations, the soil invites and the tribes flourish because of the ease of living.

Koch claims that much of the study has not gone forward because of the obstacles in the way of the methods now in vogue. But as some have asked, have we yet struck the right trail—have we not been more picturesque than anxious; have we not been rejoicing over a newborn idea and been too much swayed by our hopes? Have we not been expecting that all forces will yet be found vested with form—not so much individuals but atoms—and atoms of a peculiarly vindictive

spirit, at once powerful and prolific. Clearly all this is against the economy of nature.

In the relation of the microbe to disease, there is a somewhat dominant suspicion of circumstantial evidence—a confounding of cause with consequence, or, as might be averred, an inability to discriminate between enemy and missionary. Perhaps, as some claim, these germs may constitute a phase of universal law, and may be merely products of a congenial soil; seeds which have sprouted only because they did not fall on stony ground. Patient observation may yet wring out the secret, possibly in the near future, but to our present ken a discovery of yet greater grandeur is to come. Meanwhile all hail to Koch, who first lifted the veil.

THE TEACHING OF ANATOMY.

This subject received considerable attention at the recent meeting of the British Medical Association. MR. LAWSON TAIT, in his Address in Surgery, paid his respects to it in his usual vivacious and somewhat reckless style, and it received full attention in the Section of Anatomy and Physiology.

Mr. Tait's strictures upon the prevailing methods of anatomical teaching were mainly bestowed upon two points—needless attention to details, and what he characterized as "that senseless system of biological training which has set in as a fashion at Cambridge, at Oxford, and at Edinburgh." In regard to the first point, the waste of time spent on details that are of no practical use to the physician, there are probably few who will not to a certain extent agree with him. One of the illustrations which he uses is perhaps even better than he was aware. "I remember," he says, "that we had to learn that the anterior cavern of the fourth ventricle of the brain ran a course which was backwards, outwards, downwards, forwards and inwards, and we were enabled in the most improper way to remember these unimportant facts by the word 'bodfi.' Has 'bodfi' ever served any of you at the bedside? Is there any conceivable condition of human accident in which 'bodfi' could assist you to relieve your patient?" Leaving aside, for the present, the question of the possible utility of a knowledge of the cavities of the brain, in regard to which there might, perhaps, be room

for difference of opinion, it is evident that the instruction resulted, in this case, in a mere memory of words, without any clear idea of the things described, which can only be a delusion and a snare to anyone who depends upon it. The description which he quotes does not apply to any portion of the fourth ventricle, and is evidently intended for the descending course of the lateral ventricle. But whatever may be thought of the aptness of the illustration, there can be no doubt that medical students are often compelled to spend a great deal of time in committing to memory facts which, as taught, have no interest for them, which they will never use in practice, and which they will proceed to forget as soon as possible after passing their examination.

Without a definite knowledge of the manner and extent of biological teaching at the universities mentioned, it would, perhaps, be unsafe to express an opinion as to the justice of Mr. Tait's criticisms on this point. It is safe, however, to say that a system of instruction which aims merely at teaching the student those things for which he will have practical use will never supply the best training, even from the utilitarian point of view, and this for several reasons. In the first place, it is impossible to foresee just what knowledge may be available. In the second place, isolated facts are less easily remembered than when they are studied in their connections with each other, which can only become clear by a comprehensive knowledge of the subject. Finally, and most important of all, it is only the cultivation of a scientific habit of mind that can deliver the physician from the danger of falling into a routine of empiricism. On this point there was a happy unanimity in the debate above referred to in the Anatomical and Physiological Section. Nearly all the speakers emphasized the importance of teaching anatomy as a science, as well as in its practical applications.

We incline to think that a defect in much of the anatomical teaching of the past has been a failure on the part of teachers to appreciate the difference between their office and that of an anatomical treatise. The teacher should know all that is in the text book and more, but to tell his students all that he knows is a fatal defect. It is far better for him not to know all about his subject than not to know what to emphasize and what to pass over in his teaching. Above all, he should bear

in mind that his teaching is of use only as it imparts to his students a clear comprehension of the structure of the human body. No amount of familiarity with text books, or even with his own lectures will serve them instead of this, and probably few will ever reproach him in after life for having given them too much of it.

HEALTH OF EUROPEANS IN EAST AFRICA.

SURGEON KOHLSTOCK, of the German contingent now occupying the tropical possessions of that nation in East Africa, has issued a timely and rational note of warning regarding the risks to health sustained by some of those Europeans he has met in that part of the world. As director of the sanitary arrangements at the German headquarters, near Saadani, he has had an excellent opportunity to form opinions and to note results, which together with the sense of responsibility that impels him to give them to the world is, in no small measure, a guarantee of the care with which he has collected his facts and made his deductions. His first warning is in regard to intending colonists and traders: "Let no one," he says, "think of settling in East Africa who has phthisis in any stage, even the pre-tubercular, if he does not want to leave his bones in its soil." At first, this point of danger was not recognized in the Fatherland, and the inspecting work of medical officers, in the case of those setting out as colonizing parties was carried out in a somewhat perfunctory fashion. But the climatic influences of the region soon made their effects apparent, and nine subalterns were among those who had to be sent home—precisely those in whose families pulmonary phthisis had existed. For a man of thoroughly sound physique, the two diseases to be dreaded were dysentery and malarial fever. The former, according to the experience of Dr. Kohlstock, responds satisfactorily to the measures usually observed at the various European centres in the East, the disease, among the German troops, ordinarily running as favorable a course as in British and French garrisons. The fever is dangerous only when the patient is precluded from taking rest and is compelled to continue at his work as, for instance, on necessarily forced marches. As a general rule, the malarial patient who can rest soon gets well. If the case is stubborn, the

patient must be transferred to the sanitarium, upon higher ground and back from the coast. A liberal allowance of fresh butcher's meat has been found to be the most efficacious diet in malarial troubles, and indeed, the risks arising from them have been greatly reduced by the excellent nursing and accommodation now available to most of the patients. Dr. Kohlstock regards it a mistaken practice to entirely cut off the resident's supply of alcoholic drink, as a precaution against malarial invasion; he prefers that the East African German should, within the limits of moderation and temperance, live as nearly as possible as he did at home.

These observations merit the attention of all those who are borne on the great wave of colonization that is setting more and more strongly to the dark continent, whatever be their mission, whether religious, mercantile or military, but an especial emphasis may properly be made in regard to the importance of a careful preliminary medical examination of the physical condition and antecedents of every person about to expose himself or herself to the peculiar risks that the African climate imply. Only selected cases should be encouraged to make the venture into those regions; and least of all, perhaps, should those who confess to a predisposition to pulmonary tuberculosis, be sped upon that journey.

EDITORIAL NOTES.

A NEW MEDICAL JOURNAL.—The publishers of the *New England Medical Monthly* announce that, on January 1, they will commence the publication of a new journal to be called *The Prescription*. It will command the able editorial supervision of Dr. W. C. Wile, of Danbury, Conn. It will be devoted exclusively to practical therapeutics, and will give a world-wide *résumé* of remedial agents, and the favorite formulæ for their exhibition. The newer remedies will receive ample consideration. For the small sum of \$1 per year this valuable monthly may be added to the physician's list of journals, and we are confident that it will abundantly repay the outlay.

NEW YORK PASTEUR INSTITUTE.—This institution was opened February 18, 1890. Dr. Paul Gibier, the Director, states that during the

period from that date to October 15, 610 persons have been presented for treatment. In 480 of these cases the animals attacking them were not mad. In 130 cases the anti-hydrophobic treatment was applied, it having been demonstrated by veterinary examination that the animals inflicting the wounds were affected by hydrophobia. All the patients thus treated are at this date enjoying good health.

LAGUEAU finds that the fatality from various diseases is greater in the Paris hospitals than in private practice. He gives the following percentages:

	Private Practice.	Hospital.
Typhoid	12	19
Variola	12	17
Measles	5	23
Scarlatina	6	9
Whooping cough	6	23
Diphtheria	30	64

ACCOUNT BOOKS OF PHYSICIANS ARE PRIVILEGED.—A recent decision before the general term of a New York City court has been rendered to the effect that, a debtor who is a physician cannot be compelled to deliver up his books of account to his receiver, who has been appointed in proceedings supplemental to execution. By the order appointing the receiver, the latter acquired title to the accounts; but not to the books as well. "In the complicated affairs and relations of life the counsel and assistance of clergymen, physicians, surgeons and those learned in the law often become necessary, and to obtain it men and women are frequently forced to make disclosures which their welfare, and sometimes their lives, make it necessary to be kept secret. Hence for the benefit and protection of the confessor, patient or client, the law places the seal of secrecy upon all communications made to those holding confidential relations, and the courts are prohibited from compelling a disclosure of such secrets. The safety of society demands the enforcement of this rule." For this reason, it was held, that the physician's account books, containing information which would be privileged as concerns his patients, are not subject to discovery and inspection in an action between the physician and a third person.

HEAVY PENALTY FOR CRIMINAL MALPRACTICE.—The verdict against the New York abortionist, McGonegal, of fourteen years in the State Prison, for his fatal malpraxis in the case

of an unfortunate young woman, will be regarded as a righteous and reassuring judgment. This man had quite a large practice among the tenement house dwellers in upper New York, and used his profession as a cloak for habitual criminal practices. A fourteen years' sentence to a man of his age is apparently tantamount to a life-sentence. He was a regular graduate in medicine, from the University Medical College, class of 1852, but his name had been omitted from the *Medical Register*, or "green-book," by reason of his unsavory reputation. McGonegal's heavy punishment should have a salutary effect, as showing that the law is still potent and in full force against a class of criminals which has generally escaped the consequences of its evil deeds. And it may well be doubted if the public conscience is as fully alive as it should be to the gravity of the offense, murder namely, that is implied in the perpetration of criminal abortion; so long as public opinion is backward so long will the law be more or less of a failure in dealing with this form of murder.

THE Transactions of the annual meeting of the American Climatological Association held at Denver, Colo., September 2, 3, and 4, will be published in *The Sanitarian*, commencing with the November number. Address A. N. Bell, M.D., Editor, Brooklyn, N. Y.

THE *Bristol Medico-Chirurgical Journal* is responsible for the following:

The Tenth International Medical Congress.—A local doctor just back from the Congress tells me that a Berlin paper contained the following "Programme of Papers in the Special Department." He does not think, however, that any of the papers were read.

Prof. Dr. von Moltke: "On the Bleeding which may be Applied to whole Nations."

Prof. Miguel: "On the heaping up of Gold Molecules in the Arteries of State."

Dr. Brömel: "On the bad results of the Iron Cure in International Diseases."

Prof. Dr. Bismarck: "On urgency of Speech as a Symptom which follows vanishing Omnipotence."

Dr. Salisbury: "On the Colonial Fever."

Dr. Officiosus: "On removal of Sleeplessness by the use of the *Imperial Gazette*."

Prof. Lesseps: "On the antiseptic Resection of Isthmuses and the Cupping of Shareholders."

Dr. Milan: "On the central Disturbances which occur when One takes off the Crown in a Hurry."

DR. KOCH has ceased to make experiments in the cure of consumption, and it is presumed that his method of treating the disease has been a failure. This on the authority of a newspaper of recent date.

TOPICS OF THE WEEK.

THE MEDICAL ART IN ANCIENT EGYPT.

An interesting chapter in the legendary history of medicine was opened up recently by Dr. Grant (Bey) of Cairo, at a meeting of the Aberdeen Medico-Chirurgical Society. The subject, that of ancient Egyptian theory and practice, was, indeed, sufficiently archaic to guarantee that it should not be too familiar to attract and instruct even a cultivated audience. The lecturer directed his attention chiefly to a consideration of the work of embalming. In this connection he carefully explained the different methods pursued, the *rationale* of the process, and the results attained. We shall not now enter into these details, but we note with satisfaction that one important collateral matter, that of Egyptian sanitation, has not been overlooked. The impossibility of anything like soil contamination under a system which converted burial into a mere process of antiseptic preservation is obvious. Though certainly less efficient for this purpose than the destructive agency of cremation, it was probably superior to the many imitative methods introduced by modern mummifiers. When the body had been prepared by means of evisceration, stuffing with bitumen, cassia, myrrh, etc., immersion, virtually pickling, for a further term of seventy days in salt, and bandaging in cloth cemented with gums—the series of arrangements under the most perfect system employed—there obviously was little chance of putrefactive decay or infective mischief arising from it. But it was not thus alone that the ancient possessors of Egypt yielded an unconscious obedience to scientific laws which are only now finding their full explanation. They were also most scrupulous in guarding their sacred river against the entrance of impurity. Though some allowance must be made for the fact that such questions as the disposal of sewage must have been simpler of settlement in the days of the Pharaohs than in our own, the example of their more cleanly practice in this respect might well be copied by modern vestries and riverside proprietors. Egyptian medicine has not handed down to our time many valuable traditions. We know, however, that within the scope of professional magic which worked its “cures” in the temple of Isis, the present fashionable novelties of bath treatment, massage, and hypnotism were carried out with elaborate care. So the cycle of time, while it bears us on to new and newer spheres of discovery and activity, ever keeps in touch with those vital conditions which underlie all treatment and are never irrational, save when they are misinterpreted.—*The Lancet*.

INEBRIETY IN GREECE.

Dr. Joannes Phustanos sounds a note of alarm as to the threatened decadence and destruction of the Greek nation by alcohol. Though he denounces only ardent spirits, and does not include wine as an alcoholic beverage, he declares that the abuse of alcoholic drinks has of recent years been sadly extending in Greece, every day adding to the number of the victims. The remedies proposed consist of a reduction of the duty on spirituous liquors

and the formation of temperance (moderate drinking) associations. In Britain, however, the increase of taxes on spirits has in the main lessened the sale, and abstinence societies have been the most successful in coping with this evil. This wail over the present extension of inebriety in Hellenic lands is the more remarkable that in former times Greece was the arena of heroic anti-alcohol legislation. The Greek vineyards were all but completely destroyed by the Turks in the fifteenth and sixteenth centuries. The Athenian lawgiver Draco sentenced drunkards to death, though Solon reserved that fate only for inebriates who were also magistrates, and who were found drunk in public. Pittacus ordained that drunkenness should entail a double punishment for crime. Locrian legislation showed some consideration for the medical profession, for while all others who drank were liable to execution, on those who had the authority of a physician's prescription for tasting wine no capital or other penalty was inflicted. This praiseworthy attempt to stay the ravages of so perilous a disease in the classic battlefield of national freedom has our warmest sympathy, and we trust that never again will the ancient epithet of “hard drinkers” be justly applicable to the Greek female population.—*Brit. Med. Journal*.

THE BACILLUS OF TYPHOID FEVER.

The existence of a pathogenic microorganism in enteric fever is strongly upheld by some bacteriologists, especially on the Continent. Most English observers consider the point not yet proved. In sections of the intestines in cases of typhoid fever numerous bacilli are constantly found; they are grouped together into well-marked colonies, and are not distributed throughout the superficial tissues as in dysentery. They are best demonstrated by staining the sections in a solution of methylene blue, and then washing out the excess of stain in water containing a few drops of acetic acid. The colonies are then seen as small dark-blue masses, the rest of the tissue being a lighter color. In drinking-water, soil, or faeces, it is almost impossible to recognize them, owing to the presence of large masses of bacteria which are of no practical import. M. Holz (*Zeitschrift für Hygiene*, viii, 1890), publishes some of his investigations with regard to these organisms. He states that they can only be recognized by comparing their appearances and properties with pure cultures. In order to render their detection more easy, Chantemasse and Vidal added to the gelatine on which they were to be cultivated a solution of carbolic acid, 25 per cent. On this nutrient material the typhoid bacilli flourished, whilst the growth of the others was retarded by the carbolic acid. For the examination of drinking water Holz recommends the following method: To the water to be tested is added a 25 per cent. solution of carbolic acid. This mixture is allowed to stand for three hours, and inoculations on nutrient gelatine are then made. If a free growth of colonies takes place, these are composed of typhoid bacilli, all bacteria growing in a similar manner being destroyed. Grauscher and Deschamps have introduced another test. They mixed with the suspected liquid a solution of aniline gentian violet, and then inoculated

gelatine plates with the colored solution. The colonies of typhoid bacilli were then stained violet, whilst the general mass of the gelatine remained colorless. Holz found that this reaction occurred most readily in a slightly acid medium. The most reliable test, according to the same observer, is a combination of the first of the above methods with potato gelatine. For the preparation of this material raw peeled potatoes are well mashed, and then squeezed in linen, the resulting juice being filtered until clear brown liquid is obtained; to this is added 10 per cent. of gelatine. The reaction of this nutrient fluid is acid. On this the typhoid bacilli grow in a very characteristic manner, and especially remarkable is the transparency of the colonies, so that they can be easily distinguished by their mode of formation from all other bacteria. A number of microorganisms found in food and water cannot be cultivated on the potato gelatine, but some forms of molds and torulæ grow in profusion. This drawback may be prevented by the addition of 25 per cent. of carbolic acid to the water or liquid to be investigated, then by allowing the mixture to stand for twenty-four hours, and finally cultivating on potato gelatine. If colonies then appear Holz considers that the presence of typhoid bacilli is proved.—*The Lancet*.

HAY FEVER.

In the *State Board of Health Bulletin* (Tenn.), Dr. Daniel F. Wright, of Clarksville, a member of the Board, advocates the idea of the curability of this pestiferous malady. He thinks that by anticipating the annual recurrence of the disease and resorting to a locality free from its etiological factors for several consecutive seasons, the unfortunate individual will secure an immunity from his trouble that will be permanent. He speaks in high terms of Roan Mountain (Cloudland), in upper East Tennessee, and from his article we submit the following extract:

"Let it not be supposed, however, that I am about to set forth the specific virtues of some new drug for this purpose, or even those of certain mineral waters impregnated with miraculous chemical ingredients. The only merits possessed by the waters here consist in their perfect purity; and the atmosphere is beneficial simply from its coolness, moisture, and its freedom from dust of all sorts, including that vegetable dust which is constituted of the pollen of various plants. Very few of the plants which constitute the Roan Mountain flora give any pollen to the atmosphere, by far the greater number consisting of *conifera*, *ferns*, and *labiates*, while the great moisture of the air prevents the rising and diffusion of such as might otherwise irritate the nostrils of visitors. In short, the qualities of air and water are simply negative—they simply fail to supply the irritants which are elsewhere the exciting causes of hay fever.—*Southern Practitioner*.

THE MEDICAL PRACTICE ACTS IN MINNESOTA.

The result of seven years' operation of Medical Practice Acts in Minnesota has been to reduce the ratio of physicians to population from 1 to 650 to 1 to 1,250.

Hundreds of charlatans have been driven over to Michigan and other unprotected States. In comparing the proportion of physicians in Minnesota to that existing in European countries like France and Italy, it must be borne in mind that, where the population is scattered, the work is far greater than when people are closely packed in thickly populated districts. It is doubtful if one man can attend 1,250 people as easily in Minnesota as he could 3,500 in Italy.

The present law has been in operation for three years, and in that time 205 candidates presented themselves, and 77 of these were rejected. Many other incompetents were doubtless deterred from presenting themselves by the fear of rejection. The Examining Board has conferred a priceless boon upon the citizens of Minnesota, and its appeal for support and coöperation from the physicians of the State should be universally responded to.—*N. W. Lancet*.

MANSLAUGHTER BY A FAITH HEALER.

The practice of faith healing has received a severe check, if not its death blow in the city of Toronto. A certain well known citizen, who had for some time been the subject of diabetes, and had been dieted for it, thought he would give himself the benefit of the newest fashion, and accordingly placed himself in the hands of a Mrs. Stewart, one of the apostles of the new art. Being by her instruction freed from all dietetic restrictions, he speedily died of diabetic coma, and an inquest being held the jury found that "he came by his death through the gross ignorance of Mrs. Stewart, who undertook to cure him of his disease, in not advising him to continue the restricted diet prescribed by his former physician." Mrs Stewart is consequently now awaiting her trial for manslaughter. We forbear to comment upon a case which is still *sub judice*.

A JAPANESE LUNG DISEASE.

In a work recently published on Japan, Dr. Vincent, a medical officer of the French navy, describes a disease of the lungs which he believes to be peculiar to that country. It is caused by a parasite, the *distoma pulmonale*, and is characterized by hæmoptysis occurring several times a day for ten or fifteen years, or longer, and ending in dangerous hæmorrhage. The *distoma pulmonale* is cylindrical in form, and measures from 8 to 10 millimetres in length and 5 to 6 in breadth. It has a very muscular buccal sucker. Its ova are 0.13 of a millimetre in length and 0.07 in breadth, oval in shape, brown in color, and covered with a thin membrane. The parasite makes its abode in little cavities at the periphery of the lungs which communicate with the bronchi by narrow openings. These cavities contain epithelial debris, red blood corpuscles, leucocytes, and innumerable ova of the distoma—all these elements being blended together in a sort of pulp, which is expectorated from time to time.—*Brit. Med. Journal*.

DRUNKENNESS.

Alcoholic drunkenness is equally devoid of conscience and shame. It goes everywhere, without invitation or welcome. Whatever it touches it soils. It degrades and disfigures everything within the range of its influence—whether the familiar affairs of everyday life, or the noblest efforts of human genius. Drunkenness really seems to be insanity—reinforced and doubled—lunacy itself run mad.—T. L. Wright, *Times and Register*.

PRACTICAL NOTES.

THE USE OF SULPHONAL IN DIABETES MELLITUS.

According to Casarelli sulphonal has an efficacious action in the treatment of saccharine diabetes.

The author summarizes as follows:

1. Sulphonal exercises a favorable influence in diabetes. Thanks to this remedy we notice a diminution of sugar and of the quantity of urine, a diminution concomitant with the polydipsia.

2. This amelioration manifests itself but to a slight degree, it is true, but even after the use of 1 to 2 grams a day, but it becomes marked after dose of three grams in the twenty-four hours repeated several days in succession.

3. Even when continued for a long time, sulphonal in doses of 2 grams does not provoke any unpleasant secondary phenomena. Given in doses of 3 grams a day, it is at first well tolerated; but if continued it is soon followed by extreme somnolence and vertigo. But a reduction of the dose will soon do away with these troubles.

4. The good effects of sulphonal are equally well manifested with an absolute meat diet. If we stop the sulphonal in this case we will at once find abundant sugar in the urine.

Casarelli gives to this substance marked preference to antipyrin, which in his hands has given markedly inferior results in the same condition. —*The Bulletin Médicale*.

THE TREATMENT OF DIABETES MELLITUS.

We will suppose a case of diabetes of arthritic origin. You will first prescribe the dietetic regimen which is likely to give the best results, along with the lithiated arsenical treatment.

1. Let the patient take before breakfast and dinner 5 grains of carbonate of lithium in a tumbler of Vichy or Vals water; two drops of Fowler's solution should be added to each dose.

2. Give after meals, in a little coffee sweetened with saccharin, 1 gram (15 grains) of antipyrin.

3. Sponge the body all over every day with warm water containing a little *eau de Cologne*. Energetic dry friction with a hair glove after the sponge bath.

4. Require the patient to rinse the mouth, after carefully brushing the gums, after meals, with the boracic acid mixture above given.

5. Pursue with rigor the following dietetic treatment: A diet exclusively of eggs, meats of all kinds, fowl, game, mollusks, crustaceans, cheese. All green vegetables are permitted except beets, carrots and turnips.

Urge the free use of fatty foods, such as sardines in oil, tunny-fish with oil, sour herring with oil, pork, butter, *pâté de foie gras*, "rillettes,"

bacon fat, etc. For soups recommend principally cabbage soups, bouillon with poached eggs, chicken broth, onion soup, mutton broth, clam broth, etc. All these soups should be taken without bread or crackers.

For bread, allow gluten bread, soja bread, fromentine bread; with each meal allow three ounces of boiled potatoes. To sweeten drinks, use pastilles of saccharin. Tea, coffee, maté, kola are permissible.

Prohibit all amylaceous foods, bread, panada, macaroni, rice, pies and cakes, custards, puddings, sugar, sweetmeats, chocolate, preserves, all fruits.

Milk is forbidden unless taken in very small quantity. All sauces and gravies containing flour are also forbidden.

For drinks, allow with the meals wine diluted with Vals or Vichy water, but little pure wine, no brandy or other distilled liquors.

6. Regular daily exercise to be taken. All bodily exercises are favorable. Insist especially on walks in the open air, mountain excursions, fencing, boxing, joinery.

Such, gentlemen, are the bases on which should be established the regimen of diabetic patients. — Dujardin-Beaumetz, *Therapeutic Gazette*.

ANÆMIA WITH AMENORRHEA.

R—Acidi arseniosi, gr. j.
Ferri sulphat. exsicc., ʒ ss.
Pulv. pip. nigr., ʒ j.
Pil. aloes et myrrhæ, ʒ j.
M.—Et div. in pil. No. xl.
Sig. One twice a day after meals.

—*J. Milner Fothergill*.

ALBUMINURIA.

R—Potass. acetatis, ʒ j.
Chloroformi, ʒ ss.
Acid. benzoic, ʒ ss.
Aquæ, q. s. ad ʒ viij. ℥
Sig. f ʒ ss every four hours.

When the prescription given above fails to give any tangible benefit, I then substitute the following:

R—Potass. acetatis, ʒ ij.
Acid Benzoic, gr. xx.
Sacch. lactis, ʒ iv.
Aquæ, q. s. ad ʒ iij. ℥
Sig. f ʒ j every two hours.

—*Prof. Waugh*, Philadelphia.

CHILBLAINS.

Prof. Morrow is credited with this apparently excellent formula for chilblains:

R—Acidi carbolic, ʒ j.
Tincture iodini, f ʒ ij.
Acidi tannici, ʒ j.
Cerat. simplicis, ʒ iv.
Misce bene ut ft. ungt.
Sig. Apply two or three times a day.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

*Stated Meeting, September 24, 1890.*THE VICE-PRESIDENT, JOHN B. ROBERTS, M.D.,
IN THE CHAIR.*(Concluded from page 625.)*

DR. JOSEPH PRICE, of Philadelphia, read a paper on

CERTAIN CAUSES OF MAJOR PELVIC TROUBLES,
TRACEABLE TO MINOR GYNECOLOGY.

With the present popular cry of "conservatism," in reference to operation in cases where it is held that all treatment should be tried previous to real surgical interference, it is worth while asking whether the preliminary treatment should not itself be abandoned in the hands of those who plead most pathetically for it. Their cry is not a scientific plea, but in most instances a *personal bid* for indulgence while they try to accomplish something, without acknowledging on the one hand that there is little or nothing to encourage them in their work, so far as results are concerned; and on the other, that there are abundant proofs from the cases that have come out from under their hands, with one treatment or another, that manifold really major surgical affections arise merely from treatment recognized as orthodox from the standpoint of minor gynecology. So far as my own experience is concerned, I do not hesitate to put minor gynecology in a causal relation with a vast amount of the necessary major pelvic surgery coming under my attention.

First among these causes may be mentioned the Emmet cervical operation. Like many other surgical operations, this, when first explained by its distinguished originator, was done in season and out, by everyone, without the least consideration of its contraindications. Very many minor tears of the cervix, in which a cosmetic effect only is obtained by operation, are made distinctly worse by operative interference. In many cases the pain becomes insufferable, from the lighting up of a dormant or unrecognized pelvic trouble, and operation is required to undo the mischief of an unnecessary cervical closure. This fact has been recognized by Emmet himself, and he has counselled the careful selection of cases in order to escape these disastrous results. It should be set down that where is preëxisting pelvic disease, even though slight, no cervical operation ought to be tried unless absolutely required by the condition of the patient. Another operation which has met with much approval in many directions, and which some measure of success seems to follow in some cases, is the forcible dilatation of the cervix. It is clear that where there is antecedent inflammation of the pelvic viscera, that is of the

genito-urinary system, such an operation as surgical dilatation of the cervix cannot be free from danger. In order to relieve dysmenorrhœa by this procedure, it must evidently be due to stenosis of the os or cervix. The question here arises, can it be told, in dysmenorrhœa, wherein its causes lie? Sometimes, but not infallibly. The fact is, that in many women where a stenosis would be diagnosed, there is no difficulty whatever attending the menstrual flux. This being the case, it is evident that a diagnosis cannot be made by simple observation without a careful study of all the symptoms. Again, in many women the causes for this condition are complex. It will not do to lose sight of this, and conclude that because a flexion exists dilatation will remedy menstrual pain. It is to be remembered that if there is coexisting pelvic inflammation dilatation will increase it, and, under certain conditions, cause it if absent. Rapid dilatation of the cervix is a distinct traumatism, and along with it run all the dangers incident to septic absorption that attend any other violent procedure, and where traumatism incident to natural causes is confessed to be the cause of so much subsequent mischief, it ought not to be expected that *operative injury can be harmless*. This conclusion, reached inferentially, has been abundantly confirmed practically on the operative table by much of my later pelvic work. In a number of cases with a history of preceding dilatation, the after-operation has exhibited an inflammatory condition of affairs as complicated as any other in my experience. Some of the dilatations were done with preëxisting disease, which was made worse by this interference, while others were done simply to relieve the dysmenorrhœa, and resulted in the establishment of a complicated surgical disease in which operation was *necessary purely to save life*. All in all, I believe that, judged simply by its remoter effects, the operation of rapid dilatation is a dangerous one, and *results oftener in subsequent harm than in lasting good*. The surgical injury to the cervix is, in many of these cases, more pronounced than the tears of the cervix which it is the intention to remedy by Emmet's operation. In this case there is operation at each horn of the dilemma, and the results are often equally bad at both. Simple closure of the cervix in cases of pelvic disorder, almost certainly exacerbates the symptoms. The necessary inflammatory action set up in the suture tract, is transferred along the lymphatic or venous channels to the seat of the earlier inflammation, this is lighted up anew, and goes on in its development until a pelvic peritonitis is kindled or rekindled, which at last entails a major operation. The minor gynecologist, as such, who has no regard for or appreciation of the relation of the commonly advocated general closure of perineal and cervical tears to major surgical complications,

cannot but be a great factor in the causation of the same. In Pepper's System of Medicine, Vol. iv, there is on record a case in which the operator hoped to cure a pelvic inflammation by the derivative effect of a perineal or cervical operation. Needless to say, pelvic operation was afterward done. Such a cure is no less ridiculous than the so-called "faith" cure, and is certainly more actively harmful.

That the inconsiderate use of the uterine sound has been responsible for much inflammatory pelvic trouble, is scarcely to be disputed. This is not because the sound is of itself a dangerous instrument, but because it is put into the hands of every tyro, as an instrument of diagnosis. If used at all, it should be in the hands of those with whom its application, by reason of their skill, will be exceptional, not usual, and the rule should be, that in the hands of the non-expert it should be forbidden. The more expert and experienced the specialist, the more rarely will the instrument be required. My own rule is, that in cases in which it might at first seem indicated, a little patience and diligence will obviate the necessity of employing it. The indiscriminate use of the sound and electrode, is the most serious *mechanical* objection to the employment of electricity. Every sitting for the electrical treatment is prefaced by the use of the sound, and followed necessarily by the introduction of an electrode of some form. This is by a class of men who, in the main, have had no *previous gynecological training or education* whatever. In such hands such methods can only be harmful, and we are now reaping the fruits of their work in a class of pelvic operations not surpassed in the complications presented. Along with the sound may be placed the curette in the same category. Dilatation, with curetting of the uterus, have placed to their credit a long *series of major operations*.

Another class of cases coming under this head are those in which there has been a long time during which intra-uterine applications have been made. All the caustics in the catalogue have at one time or another been in favor, as cure-alls, in intra-uterine therapeutics. Nitric acid, chromic acid, nitrate of silver, and the rest. For a woman to have undergone a routine treatment with this list, and to have escaped pelvic inflammatory trouble, is little short of a miracle. A careful inquiry into many of the cases coming under my care directly and indirectly, reveals the history that all sorts of minor procedures were tried, only to fail and apparently hasten the necessity for operation. I shall refer to and illustrate these points by the citation of cases in the discussion.

DR. F. E. MONTGOMERY: I fully second what Dr. Price has said with regard to the frequency of troubles necessitating major operations which result from the various methods of procedure in minor gynecology. I do not think that any per-

son who has practiced gynecology has not met with cases of inflammatory trouble of the uterus travelling to the ovaries and to the peritoneum, giving rise to conditions which have been described as peri- and para-metritis, which have resulted from the use of the uterine sound. When we consider the fact that the uterine sound has been a part of the routine method of examination of many physicians practicing this branch of the profession, it is not surprising that these troubles should so frequently occur. The uterine sound, as has been stated, should not be introduced in any case until the patient has been thoroughly examined, and the presence or absence of any inflammatory condition in the uterus, or about it, has been eliminated. The practice of Emmet's operation upon cases as soon as they consult a physician for treatment, where a slight laceration is found and the physician at once attributes the symptoms to this lesion and performs the operation, has justly led to its discredit. The operation is undoubtedly one which, in some cases, is of great benefit; it is, however, in properly selected cases. No case in which the presence of other inflammatory conditions has not been eliminated or cured by proper methods is suitable for the operation. One reason, I think, why Emmet's operation has proved so disastrous in many of these cases is the fact that, as the result of sub-involution of the mucous membrane from this lesion, we have an increased amount of secretion which, after narrowing of the cervical canal by the operation, is unable to escape freely; consequently, the uterus becomes dilated to a certain extent, and this favors more rapid extension into the Fallopian tubes and the development of serious trouble. One cause of the extension of inflammatory trouble from the uterus to surrounding parts is insufficient drainage from the cavity of this organ. Dr. Price very justly condemns the use of irritating materials which have been employed in the cavity of the uterus. Many who have proposed agents for the treatment of inflammatory troubles in the cavity of the uterus have seemed to labor under the idea that the only method of curing these inflammatory lesions was by destroying the mucous membrane in which they originated. The application of nitric acid, chromic acid, nitrate of silver in stick, and the like, results in relief by destroying the mucous membrane from which the secretions take place. In this way inflammation may be caused which may extend to the deeper structures of the uterus and to the pelvis. I fully agree with the importance of care in the treatment of these various classes of cases, to avoid adding to the discomfort and to the crippling of patients.

DR. JOHN C. DA COSTA: I am glad to hear Dr. Price speak of the dangers of minor gynec-

cology, but I do not know how we shall get along without it, unless we adopt the rule (which he leads us to infer from his paper is his) that in all these ailments we open the abdomen and remove the tubes and ovaries. I hardly think that Dr. Price is right in attributing the major pelvic troubles to gynecological treatment, for, from the little that he has said, I think that we may infer that the pelvic trouble already existed, and the practitioner made a mistake in treating the uterus rather than the uterine appendages. I am glad to hear him speak in regard to Emmet's operation. I have heard long lists of cases reported with the statement that "all recovered without bad symptoms." That has not been my fate. One of the hardest fights that I have had for a woman's life has been after an operation on the cervix. Many unnecessary operations are done on the cervix. They are often done by men who want to make a record—by men who practice gynecology without knowing much about it. They see a torn cervix, and, without knowing whether or not the symptoms are due to that, proceed to operate. They do it, also, without properly preparing the patient beforehand. Where a lacerated cervix needs operation, as a rule, it needs previous treatment. If the cervix is put in proper condition, there will not be the same liability to bad results.

There is probably no instrument that is more used in minor gynecology than the dilator, and there is probably no instrument that can be more abused than the dilator. Professor Goodell has reported to this Society many cases in which forcible dilatation has been used with grand results. I have used forcible dilatation in many cases, and have never had any bad results. The reason is that, when I began the study of gynecology, I was taught how to use it properly and not to use it in every case. Take the sharply bent womb, and all the pessaries made will not straighten it. You must put something inside, either a dilator or a sponge tent. Again, let the uterus become congested and the mucous membrane swollen, closing the uterine canal and causing dysmenorrhœa. You can cure that case in from two to four treatments by dilatation, while you may treat it by other means for months without doing good. The dilator is a surgical instrument, and one which must be handled carefully. You must know how to do your work before you attempt to use it.

Now, in regard to the use of the sound. I hear gentlemen state that they can outline any uterus without the sound. I have tried that, but have never been able to do it. Take a uterus enlarged, like this sketch, and I defy anyone to say in what direction the canal runs. It may be a uterus in the normal position with a fibroid of the posterior wall, or it may be a retroflexed uterus with a fibroid on the anterior wall, or a

plastic mass between the uterus and bladder. It behooves us to use the sound carefully. If a man tries to force the sound into the canal, he will certainly do damage. If, however, he will outline the shape of the uterus as well as possible, and then bend the sound to fit as nearly as may be, and then make effort after effort, he can, in the most distorted uterus, get the sound in without damage. Then, in regard to the curette. These usually have a sharp, cutting edge. Such an instrument is hardly safe for an able practitioner to use, and is not safe at all in the hands of an unskilled person. Where inflammation extends from the uterine cavity to the tubes, after the use of the curette, it is not so much from the instrument as from the man who uses it.

I should be loath to give up intra-uterine applications. I have used them a long time, and, while sometimes pain has been caused, they have never done any serious damage. As Prof. Wallace used to say, "Some uteri are sensitive to the slightest touch, and some are as stupid as oxen." When you make an application, you must know the uterus which you are treating. Nitrate of silver used to be a common application, but it is one of the worst that you can make. It will, as a rule, produce cicatricial contraction of the canal. Nitric acid, although so much stronger than nitrate of silver, is not so apt to do this; but nitric acid is rarely required. In a case of fungous granulation, I should not hesitate to scrape out the whole inside of that uterus and make a strong application, and after watching the patient for a short time, send her home, and not expect to have any trouble. This is because I know my cases. I do not do it to every case. I think that Dr. Price will find that the dangers from minor gynecological operations are more because of want of good, sound judgment in the practitioner, and not so much in the operation itself. I cannot agree that pelvic troubles are always due to these minor operations.

DR. JOSEPH HOFFMAN: I have put on record in the Obstetrical Society a case where the uterus was perforated by the curette, and this case serves to show that the remarks of Dr. Da Costa enforced the argument which Dr. Price endeavors to bring out, to wit, the danger from the widespread use of the uterine sound, the curette, and the dilator, as advocated by some. I believe that, if we took all the gynecological instruments invented and put them together and multiplied them by ten, we should have no such instrument as gives such bad results as the dilator. It is easy for Dr. Da Costa to claim that he knows when to use it and when not to use it. I think that he over-estimates his ability to say whether he has ever done harm by it, for patients rarely come back after they are harmed. I have seen to-day two patients that had been treated by the curette, and from whom I have removed the ap-

pendages. In one case that I know of, the uterus was torn by the dilator, then a sponge-tent was put in and allowed to remain I do not know how long. You know the rest. In the case in which the uterus was perforated by the curette, the operation was done by a gynecologist of considerable experience. Nevertheless, the uterus was ruptured and peritonitis was brought on and abdominal section was necessary to save life. I have to-day had two other women who were treated by minor gynecology; they were both left very miserable. In one the vagina is much contracted and the pelvic viscera are certainly affected. In one of these cases, especially, electricity was used *ad nauseam*. The history is this: first, dilatation and scraping; then, closure of the perineum; and then, opening of the abdomen. In regard to operations on the cervix and perineum, we are to remember that operation on the perineum is not so apt to cause trouble as operation on the cervix.

What operations on the cervix are necessary? Every cervix with a slight laceration does not require operation. Some of these heal without suture, although traces of the damage may remain. The preparation of the patient often shows that operation is unnecessary—puncture and the ordinary derivative procedures so reducing the size of the cervix that the laceration almost disappears. In regard to ulceration of the cervix, I do not believe that there is such a thing, except as the result of bad laceration or specific disease. In laceration the ulceration is only apparent; it is really an erosion due to eversion and hypertrophy.

The curette in some cases seems to be a necessary evil which we cannot do without. I have found it useful in getting rid of putrid *débris* from a miscarrying uterus, in the early weeks of pregnancy, when the use of the finger is thoroughly clumsy and painful, if not impossible, without previous dilatation with a tent. In the presence of such detention, the use of the tent is not without danger, since, during the period of its presence in the cervical canal, all channel of escape for decomposing material is shut off. I can say that I have had no bad results, that I know of, in the use of the instrument.

DR. WILLIAM E. ASHTON: The question of the use of the dilator depends upon one or two facts. First, as to the condition of the uterine appendages and their surroundings; and, secondly, properly selected cases. I do not imagine that anyone would use the dilator when we have present acute or chronic inflammation of the uterine appendages. I think that anyone who has had experience in the use of the uterine dilator would hesitate to employ it except in selected cases. I believe that where we have the pelvis perfectly free from local disease, and in cases where the uterus is strongly anteflexed and perfectly mov-

able, and upon the introduction of the sound we find that there is a point of intense pain at the internal os, we shall find in a certain proportion of cases that good results are obtained from the dilator. It is nonsense to talk about the causes of dysmenorrhœa. It is only a symptom. The vast majority of cases of dysmenorrhœa are cases which have a distinct tubal or ovarian origin. It would be absurd to rapidly dilate in such cases. In regard to Emmet's operation, I agree with Dr. Price in reference to minor gynecological operations dealing most disastrous results in the pelvis. I grant that there are cases, in which the uterus is in a state of subinvolution where a plastic operation will bring about a cure, but I do not believe in operating on the uterus if there is any diseased condition of the appendages. Any manipulation under such circumstances is apt to set up inflammation. Four years ago, I had a case of bad laceration of the cervix in a woman, with pus tubes on both sides. I refused to operate on account of the disease of the appendages. She then went to New York, and was operated on by a prominent gynecologist, and died of large abscess, the result of the operation lighting up the old inflammation.

DR. DA COSTA, in answer to Dr. Ashton: I probably did not make myself clearly understood. I do not want it understood that I would do an operation on the cervix if there was inflammation in the pelvis, such as pus tube or anything else. My teaching is: When there is violent inflammation in the pelvis, not to do any operation on the uterus, and to hesitate to use the sound.

DR. J. M. BALDY: I think that there is no question in the minds of gynecologists that Emmet's operation is a much abused operation. I think that it is also true that the vast majority of these ill-advised operations on the cervix are done by men who have no gynecological experience and who know very little about gynecology. I can recall two cases in which I was recently called to operate on the cervix by general practitioners, and by whom I was informed that the lacerations were very bad and that the woman was suffering greatly. On examination, the tears proved to be comparatively slight, and needed no interference. There are some cases in which a cervix operation at first sight appears justifiable. These are cases in which the cervix is torn to the vaginal vault. I care not if the cervix be torn on both sides to the vaginal vault, if there is not eversion and erosion, or much scar-tissue, there is no reason for operation. I should be loath to give up forcible dilatation in certain cases. It is not to be done in every case of dysmenorrhœa, for the vast majority of cases of dysmenorrhœa are due to ovarian or tubal disease. I believe that in the vast majority of cases where trouble follows the use of the dilator, there has been preëxisting pel-

vic trouble. I do not think that a carefully done dilatation in a healthy pelvis will do harm. It is admitted that it does tear uterine tissue, but that this can cause trouble, unless the wound becomes septic, I am not prepared to admit.

The use of the sound in the hands of a doctor is in inverse proportion to his skill. The man who is skilled rarely uses it. In such cases as have been mentioned by Dr. Da Costa, I see no use for the sound. I do not see anything essential that it could tell. I must say that I have not seen a uterus of the exact shape he has figured on the board. In the vast majority of cases I have been able to tell which was fundus and which was tumor. If we are dealing with fibroid, it makes no difference what wall of the uterus it occupies. I do not suppose that I use the uterine sound once a month.

The curette, I think, is a valuable instrument, but it is abused and used indiscriminately. After abortion, I find it most valuable. In some cases of chronic endometrial disease it is valuable. I believe that it will remove almost all necessity for intra-uterine treatment. I find such applications rarely called for except, perhaps, the application of nitric acid or iodine, after the use of the curette. I think that the dull curette is useless. The only rational instrument to use is the sharp curette. I was recently called some seventy miles to see a case where the physician assured me that the uterus contained nothing, as he had twice gone over it thoroughly with the dull curette. I used a sharp curette and removed large masses of placental tissue. The sharp curette can be used with as little danger as any other instrument, if used properly in skilled hands.

DR. J. M. FISHER: I am engaged in treating a number of uterine troubles with electricity. Dr. Price has stated that the use of the electrode is fraught with much danger. That the introduction of any instrument into the uterine cavity carries with it a certain risk is not denied, but that the electrode is especially responsible for many of the diseases can certainly be questioned. There are certain diseases of the uterine tissue and lining membrane that can be most effectively treated by properly applied galvanism. I can cite one case in which the use of electricity saved the patient from undergoing a major pelvic operation. A woman, forty-two years of age, had a fibroid uterus with hæmorrhages, so that she was confined to bed half the days of the year. At the time that I was called she had been laid up for nine weeks and was exsanguine from loss of blood. She had been treated by two good practitioners, and, failing to give her relief, operation was proposed and about to be done. I made a positive application of electricity, and after the first or second application, the hæmorrhage was arrested. Four applications, extending over a period of

twenty-one days were made. This was in November and December, 1889. After that she menstruated regularly until May, when she was again seized with hæmorrhage. I was out of town, and the bleeding continued three weeks. On my return I made a positive application of electricity, and since then the menstrual discharge has been regular, lasting three or four days.

DR. C. P. NOBLE: I am convinced, as the result of my experience, that the less the uterine sound is used the better for the patient. Recently a case passed through my hands in which the question of pregnancy was mooted. She afterwards fell into other hands, and the sound was passed three inches and the patient was supposed not to be pregnant. She was, however, seven months pregnant, as subsequent events showed. The information given by the sound is often delusive. I, however, cannot see how the simple passage of the sound, provided it be clean and passed through a speculum, with a clean cervix, should set up pelvic inflammation, provided such trouble does not already exist. This, however, is neither here nor there, for I do not see that we need to use the sound in diagnosis. In small uteri it is not needed, because the organ can be outlined bimanually; while in large uteri, where tumors are present, the instrument may not reach the fundus, and so give incorrect information. I must agree with Dr. Baldy, rather than with the author, in regard to rapid dilatation. I should be loath to give it up. I have never seen harm follow rapid dilatation in any case. This is due to the fact that dilatation has been used in cases in which the disease is limited to the uterus. I agree that it is useless and dangerous to dilate the uterus when tubal disease is present. In uterine disease it is capable of doing a great deal of good. I am quite sure that a certain number of cases of tubal disease are set up by a narrow cervix. The secretions of the uterus cannot gain egress and set up endometritis, and the inflammation travels into the tubes. In these cases, if the cervical is dilated to allow the free egress of secretions, it will be a positive factor in the prevention of tubal inflammation. In such cases as were mentioned by Dr. Ashton, of acute antelexion, the dilator does a great deal of good. In fact, in regard to all these minor measures which have been mentioned to-night, I find them of service, but the fact must be emphasized that they are useful only when the disease is limited to the uterus; and that the uterus should not be operated on, in any way, in the presence of pelvic inflammation, particularly abscess.

Why we should give up the curette I cannot understand. There are many cases of hæmorrhage from the uterus due to uterine disease purely, where there is no ovarian or tubal disease. In such cases the use of the curette will permanently control the hæmorrhage. I think that

one reason septic trouble follows minor operations is because antiseptic precautions are not observed. I think that is the case with the dilator. If used on the office table, it is impossible to employ complete antisepsis. If such precautions are used, and there is no extra-uterine inflammation present, I do not think that inflammation will follow any of the minor gynecological operations.

DR. PRICE: I am sorry that the discussion has taken the direction that it has, for it does not give me an opportunity to express myself thoroughly; it does not give me an opportunity of pulling out a number of telegrams; it does not give me an opportunity of calling things by their right names. I have thrown down the gauntlet, and no one has quite taken it up. Some one has spoken of minor gynecological methods. In a recent article a writer prefaces what he has to say by giving details of methods for the treatment of "ordinary gynecological troubles." I do not know what "ordinary" gynecological troubles are. If it means from 9 o'clock to 3 in an office, with a nurse and a Sim's speculum, peeping at crevices and taking ten dollars from each patient, then I understand it. He is the great mischief-doer. He tinkers, dilates, curettes, and passes the sound, and in from four to six weeks I get a telegram to come and open the abdomen to save the patient's life; that the woman is leaking; that she has a pulse of 130-140, with a temperature of 104°. This occurs weekly. A speaker stated that there is no harm in electricity. Three fibroids in that jar have pus in them as the result of the use of electricity. Of the twenty specimens in that jar removed during August, 50 per cent. followed dilatation, closure of the cervix, the use of the sound and the curette. These specimens have come from four clinics in this city and from ten prominent gynecologists. They all had sections to save life, and all were greatly complicated operations. In regard to the sound, Dr. Ashton has said all that I am capable of saying. I have not used the instrument for many years. It is a common method of determining the existence of pregnancy, particularly among homœopaths, although not confined to them.

In comparison with the former state of the same subject, we must inquire into the causes which must have been at work during the past few years. This private-office work has a great deal to do with it. Many of these men are simply cervix-feelers, and never find anything above it. There may be a mass larger than the uterus to one or both sides, which he fails to find. They are not anxious to find them, and would not be troubled by them. The dysmenorrhœa in infantile uterus has nothing to do with the uterus. Pelvic pain in all infantile conditions of the uterus and pelvic viscera is exceedingly common. In these cases dilatation avails nothing. Dr. Baldy says that he uses the sound once a month. I

presume that he dilates about once a month. I will consider together drainage of the uterus, referred to by Dr. Noble, and the use of the sound and dilator, referred to by Drs. Baldy and Noble. The sound measures about two lines in diameter, but we will say that it measures only one. I am sure that the drainage is quite sufficient through a canal one line or more in diameter. I find that those who have such a love for dilatation always precede it by the use of the sound. If they use it for drainage the indications are not clear.

DR. BALDY: I would ask to what part of my remarks Dr. Price refers. He has entirely misunderstood me. He stated that presumably I dilated for drainage, and that I first pass the sound, which will of itself establish drainage, without the dilator. My remarks were not in regard to dilatation for drainage or anything of the kind. I do not know that I specified what I would dilate for. Time did not admit of my discussing that point. In regard to passing the sound once a month, I do not know that I meant to make that a positive statement. The statement was simply made to illustrate the infrequency with which I use the sound.

DR. PRICE: I thought that I had made that clear. I said that I would call attention to two points—that of drainage, as referred to by Dr. Noble, and the sound and dilator, as referred to by Dr. Baldy. In regard to closure of the cervix, there are a few cases in which the operation is of importance, but the ordinary method of closing the vaginal surface of the cervix only is very imperfect. This forms a large cuspidor-like cavity or retention sac. I have repeatedly split these up, freshened the cervix, and made a perfect cure. I have thrice this summer been called out of the city to open the abdomen in cases in which dilatation had been performed a short time previous.

Disease of the cavity of the uterus and fungous vegetations are far from common. Many healthy uteri are curetted, and it is thought that granulations are found. If the woman had been let alone, she probably would have conceived. The same is illustrated by a class of cases which I have studied among women locked up in a reformatory. Some twenty or thirty women, who had been living lives of chronic inebriety and lust for three or more years, had none of them conceived. After six months' rest, iron, and good diet, the greater number conceived on leaving the institution. In these cases no intra-uterine treatment was employed, and only one examination was made to determine the position of the uterus and its relation to surrounding parts in the pelvis. As a diagnostic instrument, I do not see why any one should want to use the sound. As a student, I never could see what was gained by the use of the sound; in the hands of the trained or experienced it is not needed, and in the hands of the inexperienced it is dangerous.

DOMESTIC CORRESPONDENCE.

LETTER FROM BALTIMORE.

(FROM OUR OWN CORRESPONDENT.)

Prof. Wm. H. Welch on Arterio-Sclerosis—The Attendance at the Medical and Dental Colleges—The opening Lectures—The Johns Hopkins Hospital—The Reconstructed College of Physicians and Surgeons—What the Faculty of the University of Maryland are doing—A new Homœopathic Medical College—The Baltimore Medical and Surgical Record—Miscellaneous Gleanings.

The colleges and societies have fully resumed work for the season, and with most flattering prospects. Our chief medical society, the "Clinical," elected for its presiding officer for the current year Dr. Hiram Woods, Professor of Diseases of the Eye and Ear at the Woman's Medical College and Assistant Surgeon of the Presbyterian Eye and Ear Hospital, who has been an active worker among the younger set.

The feature of the first business meeting of the same society, held last Friday week, was a paper, or more properly a lecture, by Prof. William H. Welch, of the Johns Hopkins Hospital, on "Arterio-Sclerosis." Prof. Welch devoted his attention chiefly to an exposition of the recent researches of Thoma, which he was able not only to accept but also to confirm by investigations in his own laboratory. The series of pathological changes resulting in the condition known as arterio-sclerosis, originates, according to these authorities, in a weakening and yielding of the middle cord of the arteries. Nature makes an attempt—often abortive though it be—to compensate for this defect by a deposit and consequent thickening of the intima. This view systematizes the subject in its various aspects and shows how under various circumstances as in the foetus, after labor, in connection with Bright's disease, etc., alterations in the volume of the peripheral circulation are met by a corresponding reduction in the calibre of more central vascular channels. The lecture was illustrated by numerous interesting microscopio and macroscopic specimens.

Among those who took part in the subsequent discussion, more, however, from a clinical than a pathological standpoint, were Drs. Osler, I. Edmondson Atkinson, and Keirle.

The attendance at the Colleges—notwithstanding an anticipated falling off on account of the projected elevation of the standard in 1891 and 1892—is very large. At the University of Maryland there are from 230 to 250 medical students and about 125 in the Dental Department; the College of Physicians and Surgeons has about 304 medical students and the Baltimore Dental College, which is affiliated with it, about 125;

the Baltimore Medical College has about 100, and the Woman's Medical College 18 or 19. The number at the Baltimore University across the Falls is unknown; this institution has organized a Veterinary and a Law Department, Dr. Ward, F.R.C.V.S., having charge of the former.

The opening lectures at the College of Physicians and Surgeons and the Baltimore Medical were delivered by Profs. George J. Preston and Thos. A. Ashby, the former taking for his subject "Higher Medical Education;" at the Woman's Medical College Prof. Jay held forth; the University of Maryland for many years has had no formal opening.

The authorities of the Johns Hopkins Hospital—so far as I have seen—have not repeated their announcement of special courses given last year, although I believe instruction goes on regularly with the internes. The establishment of the medical school in connection with the Hopkins Hospital is delayed, as is well known, on account of lack of funds, the school being a part of the University proper, which has an endowment independent of the Hospital. By a reinvestment of the Baltimore and Ohio stock of the University in good paying securities, that portion of the Hopkins foundation has been relieved of its temporary embarrassment, but it would appear from the appeal which President Gilman made to the wealthy for aid in inaugurating the Medical School, that the funds do not suffice as yet for another large drain upon the University's resources. Judging from the liberality of Baltimoreans to this institution in the last few years, there is every reason to think that the appeal, backed by the President's influence and energetic efforts, will result as successfully in this case as in the former one. The ladies continue their efforts to raise the \$100,000 which they hope and believe will secure admission by women to the privileges of the future medical school. At last accounts some \$60,000 had been raised. From what I have heard there seems to be a strong sentiment in favor of the women among the professors and Trustees of the Hopkins, but whether the latter will decide to make the change when the time comes, especially with so small an inducement as the ladies propose, is quite questionable.

Improvement is the order of the day at our two leading Colleges, especially at the College of Physicians and Surgeons. One could scarcely have realized the possibility, to say nothing of the probability, of the vast changes that have taken place in the condition of this institution within the past two or three years. Their shabby old building, which served the double purpose of a college and hospital, has given place to a grand hospital occupying the entire city spring lot, formerly vacant. In place of the old building itself, a larger and more substantial one is rapidly approaching completion for college purposes exclu-

sively. Whilst a part of the old walls were used in the construction or reconstruction, the arrangement and plan are altogether different, and provision seems to have been made with admirable foresight for the best instruction in medicine attainable under the present methods and with the present resources. Entrance to the ground floor through a wide arched doorway reveals a large reception room, ranged around which are the drug room and nine private apartments for the various clinical departments. The rear of this floor contains apartments for prosecting, vivisection, the manufacture of drugs, and vats for the preservation of forty bodies. A wide stairway leads from the reception room to the floor above. Here are located the reading-room, a spacious and well-lit apartment, the Faculty room, the offices, the chemical apparatus room, a waiting-room, a lecture-room and apartments for the resident physicians and students. An elevator serves for the conveyance of bodies, etc., from the first floor. The rear of the third and fourth floors is occupied by a second lecture-room, which is one of the handsomest I have seen. The lofty ceiling is finished off in wood, the beams and arches which support it producing a fine effect upon the eye. A large chandelier hangs from the centre and a smaller one from the ceiling over the enclosure for the lecturer. Both lecture halls are semi-circular in shape, and contain seats for about 300 pupils; they are provided with strong wooden folding back chairs, the rows of which rise one above the other as in an amphitheatre. The third story front contains the chemical, physiological, histological and pathological laboratories, which are provided—or will be—with necessary apparatus, including a dozen or more microscopes. There are also smaller apartments on this floor for private research. The fourth floor in the lofty mansard roof is appropriated to the purposes of dissection and post-mortem examinations. There are accommodations here for thirty to forty students to dissect at one time. The whole building is heated by steam, and is well lighted; the lecture rooms are to be lighted by electricity. This large outlay by the Faculty, which will cut off their salaries for at least two years, evinces a most commendable determination on their part to be abreast with the better class of medical schools, and they deserve the greatest credit for their really honest efforts and praiseworthy self-sacrifice.

The Faculty of the University of Maryland have recently spent about \$10,000 on their hospital. Besides a general overhauling of the building, a large addition has been erected for the accommodation of the Nurses and the Nurses' Training School, which was instituted under the charge of Miss Parsons, an experienced English nurse. Lectures were delivered during the summer by her and by members of the Faculty to some thirty or more nurses. The change was necessitated by

the departure of the Sisters of Mercy (Catholic) who had been in charge of the building for many years. These Sisters have taken charge of the new City Hospital of the College of Physicians and Surgeons. On their leaving the Faculty decided that the most urgent need of their institution at this time was thorough provision for efficient clinical teaching, of which good nursing is a most essential part. They established their Training School for the purpose of providing a supply of skilled nurses primarily for themselves, and secondarily for the community. The demand for such nurses is greatly on the increase, but what we need are good and competent nurses at moderate prices.

The newspapers announced yesterday the organization of the "Southern Homœopathic Medical College," a new claimant for public patronage in this already overburdened medical centre. Twelve chairs and two lectureships were filled by local practitioners, vacancies remaining in the chairs of surgery and operative surgery. This institution, with its hospital, is the outgrowth of a schism in the homœopathic camp. As they are backed here by a large and wealthy following, the institution will doubtless meet with an early and substantial success.

Simultaneously with the advent of a new college, we are treated to a new medical journal, *The Baltimore Medical and Surgical Record*,—a monthly—T. H. Graham, Editor and Proprietor. The editor, who appears to be a non-medical man, is unknown in medical circles here, at least not to the writer and others. His first number contains forty pages, presenting the usual variety, including a Berlin letter. It is adorned by an engraving and a sketch of Dr. H. P. C. Wilson, of this city. The editor proposes to call to his aid specialists in the various departments, who are expected to contribute original articles, editorials, book reviews and miscellany, for which they are to be duly compensated. The first number presents a very creditable showing, and as the journal is to be only \$1 a year, it will doubtless find a place here and prove a formidable rival to the older *Maryland Medical*.

An important publication has recently emanated from the Johns Hopkins press, being Nos. 3 and 4, of Vol. ii, of the "Johns Hopkins Hospital Reports," octavo, pp. 122. It is devoted to a report of gynecological work done at the Hospital by Dr. Howard A. Kelly and his assistants, Drs. Robb and Williams. It has been looked for in local medical circles with interest for some time, as it was known to be in preparation. As containing the views and ripening experience of one of the most prominent and leading American gynecologists, provided with the amplest means and opportunities for developing his views and carrying out the most elaborate researches.

A brief review of his work may not be without

interest to those interested, many of whom will not have access to the original work. He opens by announcing his working rules to be: 1. Antisepsis up to the moment of beginning the operation; 2. Asepsis through the operation; 3. Preservation of the aseptic state after the operation. Distilled or filtered water alone is used, and instruments are sterilized by steam in a Rohrbeck oven for one-half hour before operation. The patient likewise receives baths for several days, with vaginal douches of the bichloride, 1-1,000, or a 3 per cent. solution of carbolic acid, twice daily. More thorough measures are employed if a hysterectomy be contemplated, as attention to diet, opening the bowels, washing the abdomen with a bichloride solution, 1-1,000, and the administration of $\frac{1}{4}$ gr. of morphia and 30 grs. of bismuth. Minute details are given of the preparation of gauze, towels, sponges and ligatures. The most elaborate toilet of operator and assistants is insisted on—as change of clothes, repeated washing of hands, etc. No antiseptic solutions are used upon the patient during the operation, but distilled water alone, but in dressing the wound the latter is covered thickly with a dry powder of iodoform and boric acid (1 to 7), a thin layer of bichloride cotton is laid over this, then a wide roll of plain absorbent cotton, and the whole held in place by a flannel or muslin bandage. A table is given of fifty cases of abdominal section performed within a period of 139 days. The last case is also numbered 253, implying that the operator has performed that number of sections. There were no exploratory incisions and only two hopeless cases were refused operation. All the cases of ovarian tumor made quick recoveries. He relates a case of pyosalpinx in which the gonococcus Neisseri was found, but only after careful and prolonged search. The patient was a negress, aged 20, and the organism was not found in the other tube, which contained a much larger quantity of pus.

He looks upon the operation for laceration of the cervix uteri, in well-selected cases, as one of the most important of our minor gynecological procedures. A long table is also given of minor gynecological operations. The entire mortality is represented by four cases, viz.:

1. Death five days after vaginal hysterectomy; septicæmia; no satisfactory cause found on post-mortem examination.
2. Death ten days after removal (laparotomy) of diseased tubes and ovaries and a fibromyoma of the uterus; no satisfactory cause for death found at post-mortem.
3. Laparotomy-hystero-myomectomy; peritonitis found at post-mortem.
4. Hystero-myomectomy; a large fibroid tumor filling abdomen; death on fourth day from volvulus; peritonitis found at post-mortem.

Dr. Whitridge Williams contributes a report

of a case of carcinoma of the cervix uteri in a full-blooded negress, a very exceptional occurrence. The work is illustrated by engravings of Dr. Kelly's operating room and by some wood cuts.

E. F. C.

MISCELLANY.

LETTERS RECEIVED.

Dr. Frank Allport, Minneapolis, Minn.; Dr. H. Graff, Eau Claire, Wis.; Dr. D. C. Brockman, Marengo, Ia.; Dr. J. H. McBride, Wauwatosa, Wis.; Dr. S. Neal & Son, Peru, Neb.; The Eastman Company, Rochester, N. Y.; L. D. White, Keokuk, Ia.; Ross, Daniels & Co., Buffalo, N. Y.; Dr. X. C. Scott, Cleveland, O.; Dr. Hugh Morrow, Richland Center, Wis.; Dr. G. W. Lowry, Hastings, Mich.; Mrs. W. P. Kane, La Fayette, Ind.; Dr. M. J. Magruder, Medical Dept. Tulane University, La. Med. Library Ass'n, New Orleans, La.; Dr. H. C. Dalton, Peacock Chemical Co., St. Louis, Mo.; Dr. P. H. Reilly, Mineral Point, Wis.; University of Pennsylvania Press, Dr. W. B. Atkinson, Dr. J. Ewing Mears, Dr. J. Solis-Cohen, Phila.; Dr. Archibald Church, Chicago, Ill.; Med. Dept. Columbian University, Washington, D. C.; Gustav E. Stechert, Robinson-Baker Advertising Bureau, Dauchy & Co., J. Walter Thompson, J. H. Bates, New York City; Dr. A. W. McColl, Toronto, Ontario; Dr. J. Jenkins, Tecumseh, Mich.; Parke, Davis & Co., The Citizens' Savings Bank, Dr. J. O. Cobb, Detroit, Mich.; Doliber-Goodale Co., Boston, Mass.; Dr. C. G. Bacon, Fulton, N. Y.; Dr. D. Watson, Bellefontaine, O.; Dr. R. L. Thomson, Spokane Falls, Washington; Dr. Chaland, Liege, Belgium; Dr. J. Mount Bleyer, A. L. Chatterton & Co., New York City; Dr. Herbert Judd, Galesburg, Ill.; Dr. R. J. Dunglison, Dr. J. Abbott Cantrell, Phila.; Dr. L. Brown, Postville, Iowa; Dr. E. V. Brown, Burnside, Ill.; Dr. W. G. Austin, Quarantine P. O., La.; Dr. S. B. Rowe, Rolla, Mo.; Dr. F. H. Caldwell, Sanford, Fla.; Dr. F. B. Robinson, Toledo, O.; Dr. J. H. Parke, Flat Lick, Ky.; Dr. C. H. Beadles, Chicago; Providence Chemical Works, St. Louis; Dr. G. C. Bacon, Fulton, N. Y.; Chas. S. Baker & Co., Chicago; Dr. A. L. Hummel, Hummel, Philadelphia; Clark & Forbes, Miamisburg, O.; First National Bank, Chicago; L. D. White, Keokuk, Iowa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 18, 1890, to October 24, 1890.

Asst. Surgeon N. S. Jarvis, granted leave of absence for one month, on surgeon's certificate of disability. S. O. 107, Dept. of Arizona, October 14, 1890.
Capt. James E. Pilcher, Asst. Surgeon, is granted leave of absence for four months. By direction of the Secretary of War. Par. 12, S. O. 244, A. G. O., October 18, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 25, 1890.

P. A. Surgeon F. J. B. Cordeiro, detached from U. S. S. "Nipsic," and granted three months' leave of absence.
P. A. Surgeon A. C. Heffenger, placed on Retired List October 20, 1890.

CORRIGENDA.

IN THE JOURNAL of October 25, page 5 of advertisements, second paragraph of the Maltine M'Pg Co.'s announcement, for "The sugar of milk in Maltine," read "The sugar of malt in Maltine." In the same issue, page 626, fifth line from top of second column, for "H. O. Dalton" read "H. C. Dalton."

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ADDRESSES.

THE MEDICAL PROFESSION AS A PUBLIC TRUST.

*Annual Address before the N. Y. State Medical Association at its
Seventh Session, in the City of New York, Oct. 22, 1890.*

BY JOHN G. ORTON, M.D.,

OF BINGHAMTON, N. Y., PRESIDENT OF THE ASSOCIATION.

The history of medicine through ancient and modern times, reveals the fact that it has always kept pace with the physical and moral sciences, and its origin and growth as an element of civilization, is worthy of consideration and attentive study. It is pleasant, and sometimes profitable to turn on proper occasions from the activities of professional life, to the contemplation of the past, to the sources of our art, to the principles and necessities that called it into existence, to the trials and struggles of our professional ancestry. We shall thereby be the better able to comprehend our own favored position, to understand the extent of our advancement, to what causes we owe our progress, the labors and achievements still before us, and the places of honor to which we ourselves are likely to be assigned when the history of the present shall be written. But I do not intend, certainly not at this time, to call into review the periods which have marked the advent and progress of medicine in the various countries and nationalities of the globe. That has been already done by far abler hands, and is indeed a part of the classical history of our profession.

It is sufficient for my purposes in considering the present position of the medical profession of this country as a "Public Trust," to recognize its status as comprehended under its opportunities for education and instruction, its standard literature and journalism, its social position, its society organizations and ethical spirit, its legal relation, its scientific investigations, and its crowning glory in its opportunities for the prevention of disease and the prolongation of life.

The intelligent people of this country have laid firm hold upon the principle, that knowledge is the universal right, duty, and interest of man, and that the education of the masses is indispensable to the extension and preservation of

free institutions. With the establishment of this fundamental principle, and interwoven into the policy of our State and National Governments, we recognize the reciprocal relations which should subsist between the citizen and the constituted authorities. Our country is our commonwealth. We have all an equal share in her; her laws are alike for the protection of all; her blessings are our common privileges; her glory is our common pride. But common privileges impose a common responsibility, and equal rights can never be disjoined from equal duties. The constitution, which under God, secures our liberties, is in the keeping of us all. It is a sacred trust which no man can delegate; he holds it for himself not only, but for his children, for posterity and for the world. And he who cannot read it, who does not understand its provisions, who could not on a just occasion assert its principles, no more sustains the true character of an American citizen, than the man who would not seal it with his blood.

It is a principle of all good government and older than written constitutions, to provide for the safety of the people, and to secure to them life, liberty, and the pursuit of happiness. Political economy was designed for the improvement of mankind, and that system is a true one which educates and elevates the people; which dispenses equal, exact, and speedy justice; which maintains a high standard of public and private morals; which encourages virtuous industry and seeks to eradicate pauperism and crime.

From the wise system of common schools adopted in this country, and which may be regarded as the true palladium of our freedom, prosperity, and happiness; the door is wide open in the higher schools, in the academies, colleges, and universities for every young man of genius and enterprise. This has been made possible even for the worthy sons of poverty, by private munificence and State patronage; and a liberal education is within the grasp of every deserving student who wills that he will have it. These latter days of the nineteenth century are witnessing the most stupendous strides in every department of science, literature and art; and that man must be indeed a poor observer of the signs of the times, who does not readily associate these

advancements with the modern plans and provisions for education and the diffusion of knowledge.

While every profession and honorable vocation has been stimulated to activity and advanced in power and usefulness, in proportion as it has kept pace with the progress of knowledge; it is with the opportunities afforded the medical profession of this country for education and instruction, that calls for special recognition at our hands. I am not ignorant of the fact that it has been quite the fashion for many years past and even to the present time for essayists, special committees of medical organizations and pessimistic medical writers generally, to deplore the annual exodus of hundreds and thousands of graduates from our colleges. Perhaps the law of supply and demand may not have always operated with precision. Perhaps some or even many of these new disciples of Esculapius, may not have carried with them to their abodes on the distant frontier settlements, all the mature judgment, precision in diagnosis, and skill in treatment, which comes for the most part only by experience and patient, continued study, after college life is ended. But even with the many lamentable exceptions of incompetency and discredit to the profession, I still believe the great majority of the graduates of scientific medicine in this country at the present day are a credit alike to themselves, to the colleges, and to the commonwealth. The time is rapidly approaching, and indeed is even now at hand, when most of the medical institutions organized for instruction, will furnish every facility for a most thorough and efficient education.

The ready acquiescence in the general demand of the profession for an extension of the college term and curriculum, and also a requirement for a proper preliminary educational qualification for entrance upon the study, is evidence of a united desire and effort to elevate the standard of medical education. In part fulfillment of this desire, is the recent enactment in this State of a law creating an independent board of medical examiners; and while with some of its provisions we may well take exceptions, yet as far as the colleges with which we have any affiliation are concerned, and their students, no harm can come to them. While I am a firm believer and advocate of every measure which may tend to maintain and advance the honor and interests of our profession, and recognize the influence of a proper academic training upon the habits, thoughts, and powers of discrimination as well as the advantages and great importance of a well-rounded intellectual culture. I am not yet prepared to say with some, that the doors of our medical colleges should be closed to all persons, except those wearing literary degrees; but I trust the time is near, when their equivalent at least will be the uni-

versal possession of every medical student. With perhaps no exceptions, the announcements of the various colleges of this country for the coming sessions, make it a distinctive feature, that proof of a proper preliminary qualification will be required of students before matriculation or graduation. But while this is encouraging and evidence of some advancement in the right direction, it would be much more satisfactory to the profession if all colleges would state specifically in their announcements the kind of preliminary examinations applicants would be subjected to, or the specific proofs of fitting education required. It is certainly very evident that the trend of the times is in favor of a much higher and more complete preparation for the medical calling; and I trust the day is not distant when not only a minimum qualification will be indicated, but a maximum attainment rightly recognized and honored. Why not have degrees of special significance and distinction in the medical as well as in other professions? The stimulus of emulation is often required to develop the latent talents, and it is but right not only to afford the opportunities, but to recognize and applaud true merit and success. The medical institution that will plant itself upon such a platform, will prove in the end the most popular step ever taken in this country, and around it will cluster an alumni honored at home and abroad. To such an institution endowments are sure to be multiplied until it rests upon an enduring foundation, affording the highest facilities for a thorough and complimentary education, exalting the honor, interests, and usefulness of the profession. But while we are looking forward, working and fondly hoping for the final fulfillment of these perhaps Utopian dreams, still, we may even now ask, are the insinuations true so freely offered from some quarters, that the majority of American medical colleges are far below par, in their opportunities for instruction and their standard of qualifications for graduation? I doubt the justness of this wholesale indictment and slaughter of the innocents without specifications. I am not standing here to shield or excuse any college for dereliction of duty or incompetency, but it seems to me it is high time for the profession to demand a halt in the incessant harangues disparaging to the standing of American medical colleges. Their general abilities for offering abundant opportunities for thorough instruction cannot be truthfully questioned. I believe the great majority of them are more than ready to meet every just requirement of the profession, and that whatever of blame there may be rests at our own doors, in the unqualified and unsuitable material we are permitting or encouraging to engage in the study of medicine. Let every office in the land be permanently closed to students of questionable natural ability and proper preliminary education,

and we shall cease to hear of the incompetency and duplicity of our medical colleges. To those of us who entered upon the study of medicine forty, thirty, twenty, or even ten years ago, it is a surprise and gratification to look over the annual announcements of the colleges for the sessions of 1890 and 1891; or better still to visit those institutions, and be eye witnesses of the many and great opportunities afforded the modern student of medicine, in the extensive curriculum of instruction embraced in the didactic and clinical lectures; the advantages of practical laboratory work in chemistry, physiology, pathology, experimental therapeutics, and other departments of medicine; the admirable arrangements for dissection; the special practical instructions and exercises in the departments of medicine, surgery, gynecology, ophthalmology, and otology designed for graduates and undergraduates; the resources for clinical instruction afforded by the numerous and well equipped hospitals, dispensaries, infirmaries, and asylums; the advantages accruing to the profession from the establishment of post-graduate schools, and polyclinics, and colleges for graduates; and finally the founding of extensive medical libraries and museums, freely accessible to the profession. For all these, and more, we should be profoundly thankful and congratulate ourselves that the closing years of the nineteenth century find the medical profession of this country, with advantages and opportunities for instruction quite equal to those of Great Britain and Continental Europe.

It would consume many years of incessant study and observation to exhaust the resources afforded by such medical centres as Boston, New York, Philadelphia, Baltimore, Chicago, and many cities in the north, south, east, and west. At the risk of criticism, I do not hesitate to affirm, that for the practical every day service of the average American physician, the opportunities afforded in this country for professional instruction, both didactic and clinical, are not only amply sufficient and of the highest excellence, but equally or better adapted to his wants than the renowned institutions of the Old World.

With a general advancement to a higher standard of merit, qualification, and facilities for instruction in our seats of professional learning, the plans adopted for collective investigation of disease, and opportunities afforded for original research; there has arisen for us an elevated, distinctive, and permanent medical literature.

It is impossible to avoid the conviction, that the state of medical literature at any period, is the true and only criterion of the condition of the contemporary science and art; and if the history of medicine sustains this conviction, we may rightfully conclude that it is also true of the present, and that the status of the profession in this country may be inferred from the quality of its literature.

While during the first half of the present century there appeared many standard works of great merit by American physicians, conferring honor upon themselves and upon American medicine and literature; it is during the closing half of the century, that the most marked advances have been witnessed in the rapid issue of volumes of great erudition and acknowledged value; establishing an enviable reputation for American medical scholarship and authority, and the highest appreciation at home and abroad. But the special characteristics of the medical literature of the present day in this country, are largely due to its journals and transactions of its organizations; they comprise indeed the most original matter, and most truly represent the active living thought of the times, and the daily wants of the great mass of the profession. I have no fear of a contradiction in making the assertion, that American medical journalism is not only characteristic of the age and of the country, but has assumed proportions and weight of character unexcelled by any other department of literature, science, or art. The light of medical science emanating from these sources is shedding its powerful rays of quickening influence abroad upon the medical profession of this whole country, molding, guiding, and even controlling their very thoughts and actions in many of the relations of social, ethical, and professional interests.

Honorable and enlightened medical journalism of the present day, is doing, and will do, much more to advance the educational interests and standing of our profession, than all the forces of State and National legislation combined.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, which from its inception was designed to represent in the broadest sense, the true status and progress of the profession of this country, should be recognized and maintained as the authorized expression of the thought, purposes, and will of American physicians.

A reciprocal relation should exist between THE JOURNAL and the profession, and to this end, it should be on the subscription list of every physician throughout the length and breadth of the land. We are all of us preferred stockholders in that journal, and should see to it that its interests and our own are fully protected. But while acknowledging our loyalty to the Organ of the National Association, we must by no means forget our great indebtedness to those journals issued from the medical press of the larger cities in every section of the country.

They are so replete with the results of laborious research, of large experience, of scientific discovery, and every page filled with the most recent observations and discussions in every department of our science. To rightfully discharge the responsible duties of the trust confided to him, the physician must be informed upon those

methods and advances which increase the usefulness, extent, and exactness of his knowledge; and the greatest and most satisfying aid in all that appertains to progress and improvement, is the reliable medical journal which visits him from month to month, and from week to week. His subscription is an investment compounded many fold.

In the present state of medical science in this country, and the subdivision of its departments for special investigation, we see the activity of united efforts combined in organizations and journals specially devoted to such interests; and hence we find, particularly in the great medical centres, a large increase during the past few years of literature devoted to a definite field of labor. Without calling in question the ultimate utility and effect of this multiplication upon the future of the profession, we may rest assured that the fundamental truths of our science will ever remain, and that we may cheerfully welcome every honest laborer into the fields of our science already "ripe for the harvest."

Our medical journalists have done a great and distinctive service, especially to the younger members of the profession, by inviting and encouraging the frequent expression of original thought for the press.

The systematic and conscientious use of the pen as a means of mental development has long since been fully attested by the recorded experience of the best thinkers and writers of every age. It is the duty then of every physician, not only to select as his daily companions, medical journals devoted to the interests of the profession at large, and work of the general practitioner, and also some publications designed for special fields of labor as his inclination may dictate; but he should also contribute his mite or of his abundance to their columns, recording his observations, his mature thoughts, his conclusions, and sustaining with generous sympathy every effort of real progress in his profession.

Referring to the *social relations* of the medical profession of this country, we are thankful that as yet there are no established ranks, grades, or castes of society, which would assign the members of our profession to a special social standing; but that it is precisely what the education and qualities of the individual make them. The intelligent and gentlemanly physician is not only received as a welcome visitor at the fireside and at the bed of sickness in all shades of society, from the highest in the State to the lowest, the wealthy and the beggar alike; but he is also awarded as honorable a seat in all public assemblies whether social, literary, scientific, or otherwise, as the members of any other class of the community. In part as a compensation for his isolation from the advantages, emoluments, and honors of his highly favored brethren in the

Metropolis; the intelligent, educated rural physician, is not only often a leader in the social affairs of his district, but is usually the central power in every educational, literary, hygienic interest involving the welfare of the community.

The simple title of "doctor," however, does not by any means carry with it a passport into social life, or give him a position above that which his education, habits, and gentlemanly conduct entitles him. It is in the reciprocal relations of the medical profession to the individual that is to be found a field for the highest cultivation of the noblest instincts of our nature. The constant care of the sick, the suffering, and the dying, cannot but imbue the conscientious physician with an appreciation of the greatness of his mission and of the responsibilities he assumes. In the comfort, health, and lives of those committed to his care, he is answerable to the solemn tribunal of his own conscience for carelessness or neglect of duty.

A thorough preliminary preparation and constant efforts for the accumulation of knowledge by research, careful observation, and experience can alone qualify and render his life serene in the consciousness of having faithfully tried to fulfil his professional obligations as a "Public Trust."

The relations between the physician and patient are necessarily and so often of an intimate and confiding character, that the small aggregate of cases of misplaced confidence is a compliment to the integrity of our profession. This relationship involves the strictest rectitude and every moral attribute of the Christian gentleman.

The virtues above all others that a physician must possess, are self-denial and self-devotion, not only to carry him through the slights and crosses in his career, but also to exalt him above all and every sort of temptation, that he may always be the perfectly reliable repository of personal and family honor. This reliability is the most essential quality of the physician's character. No talent, no skill, no genius even, can compensate for its absence. But the multiplied public and private relations of our profession are known to us all, happy indeed are we, if we faithfully strive to guard the trust committed to our care.

Our duties are arduous, peculiar, and responsible, and no illegitimate considerations should divert us from their strict performance. If the physician's best services are not always appreciated and rewarded, if he may never hear the resounding applause of the populace which follows the spasmodic efforts of the orator or statesman, nor his pathway strewn with flowers like the returning conquering hero, yet if he has conscientiously and with fidelity tried to do his whole duty to those committed to his care, when he comes to give up his stewardship he may hear

the welcome plaudit, "Well done thou good and faithful servant."

To the *Society Organizations* of the medical profession of this country, we must look for the effective and permanent influences which have been exerted, giving to it as a body vitality, power, and character. The English of an old Greek proverb, that, "one man is no man," concisely expresses the great truth that man is never independent of his fellow-man. The development of his physical, mental, and moral capabilities cannot be effected alone; nor can the great purposes of life, for which he is intended be accomplished, and the comforts and happiness, which he is constituted to enjoy be realized, without the coöperation and companionship of others. However humiliating this reflection may be to man's feelings of self-sufficiency and self-complacency, he is forced to acknowledge its truth when he observes the progress of individuals and the advancement of civilization. The advantage and even necessity of association for the promotion of useful knowledge has been so generally recognized, that "learned societies," consisting of intellectual men voluntarily united for this purpose have been formed and continued for many generations, especially in the Old World, under names indicative of the particular branch of human learning they have been designed to promote.

The objects of these associations have not been simply the acquiring of knowledge, but the more useful one of communicating it, in announcing discoveries, deducing general laws from numerous facts, correcting false theories, and rendering knowledge more accessible and useful. A society is none the less entitled to the appellation of learned, if it be quite professional, and if its plan be not as comprehensive as that of the Royal Society of England, which is intended for the promotion of general literature, philosophy and natural history.

When we see the most distinguished physicians in Europe and America, those who have done the most to enlarge the boundaries of our knowledge, standing shoulder to shoulder as originators and active supporters of associations, believing them necessary, for mutual improvement and the advancement of medical science; the medical men of this day, young and old, may well distrust their own judgment, if they are inclined to doubt the utility of medical societies. There are abundant reasons why the medical profession should enjoy the full benefit of associated talent, and feel the influence of a liberal, enlightened and earnest consideration of the various topics which must claim the attention of the physician. With the great advantages we possess, we should as associations, and as a profession, strive to develop our science more rapidly and more perfectly in the future than it has been

in the past, and that our progress should be more marked in all that relates to the higher aspirations of our calling. The period in which we now live demands an intelligent and catholic spirit, as a pervading element in the whole body; so that the improvement in the science shall correspond with the progress of our race, in all that is great and worthy of the age. May this Association be the grateful agency in the unification of the members of the medical profession of the State of New York, in all that relates to their honor, to their interests, and to their usefulness.

With the incentives to society organizations, there arose a more formal recognition of the *ethical spirit* or *moral tone* which should pervade and control the profession. It became an important part of a medical education and included, not merely medical etiquette, but rules for the guidance of the physician in all the relations into which he might be called by the practice of his profession. Without arrogating too much and within the bounds of modesty, we may assume it is probable, that not another equally numerous class of men can be found, who more rigidly and tenaciously adhere to rules of an ethical character, than is done by the medical profession of this country. Admitting of exceptions, there is a disposition on the part of the regular profession of medicine, to foster and protect the interests of each other; and with a commanding moral tone to frown upon and discourage every immoral practice and vicious conduct among its members; believing the greater the trust, the greater the betrayal.

Referring to the *legal status* of the medical profession of this country, it may be said with some exceptions, that legislative enactments regulating the practice of medicine have been in the main salutary, and if thoroughly enforced, may be productive of much good to the profession and safety to the people. The highest interests of society require the adoption and enforcement of such legal regulations as will ultimately insure a high standard of education and mental discipline before entering upon the study of medicine, as well as efficient methods of securing the attainment of a fair standard of professional qualification before receiving a license to practice.

The regular medical profession do not ask of the State special privileges and immunities, no, they ask that society should exact greater guarantees from them, and that a still higher standard of qualification be demanded; they ask that the public should take earnestly in hand for self-defense, means for repression against the hordes of impostors, who trade on public credulity; they ask that both the secular and religious press, the clergy and men of position and influence should consider well the moral responsibility they as-

sume in the thoughtless or intentional commendation of the plausible quacks and their worthless nostrums.

It is, however, the *pervading spirit of scientific investigation* in the medical profession that has marked its career in the past and is leading it on with rapid pace from discovery to discovery, from victory to victory over the forces of nature in the production of disease; alleviating the physical sufferings of humanity, rescuing from preventable disease and from untimely death. There is nothing more satisfactory in the present aspect of medical science or more likely to raise it above the region of empiricism and place it on a higher scientific standard than the efforts now being made to render our knowledge more definite and exact; nor are signs wanting which point to the probability of such a consummation. We see on every side, the more rigid application of the inductive method of investigation brought to bear on the great problems of medicine, and we doubt not that the observations which are being carried on by earnest workers, especially those conducted under the plan of collective investigation, and by original research, will ere long bear still richer fruit leading to generalizations of the most important character, largely increasing our powers of differentiating between the variations which disease presents, diagnosis and prognosis made more easy and exact, and treatment more successful.

The spirit of scientific investigation which is becoming so characteristic of the present period in the history of our profession, must have derived an impetus and beneficial influence, from the more active cultivation of the physical sciences, which has lately assumed an important and proper position in the educational curriculum of the higher schools, academies and colleges of our country.

Resting, as medicine does, on a basis of scientific observation, and depending for its advancement on research and the practical application of discoveries in science, it is intimately associated with the development and progress of other sciences. In fact, there is scarcely nothing in the whole range of nature or of art, which the physician may not make use of for the purposes and accomplishment of his work. There is also another and not unimportant circumstance connected with the more general cultivation of the physical sciences which is destined to exert a beneficial influence upon the status of our profession. I refer to the higher and intelligent estimate in which the scientific physician will be held by the public at large. In proportion to the general diffusion of scientific knowledge in the community will be established for our art a recognition of its just claim on the confidence and gratitude of mankind.

But the crowning glory of the medical profession is its *opportunities for the prevention of dis-*

ease and the prolongation of life. Herein is consummated the responsible trust committed to our profession. In the economy of the State seeking for the preservation of the health and lives of a classes of citizens, it becomes necessary to enact sanitary laws and to enforce obedience to them; but in order that the people may know just what to do and how to protect themselves from the ravages of pestilential disease, State Boards of Health are created for the express purpose of diffusing the needed information. Sanitary laws are simply an application of the science of medicine in the form of remedies or preventives to the people of the State. They teach not only the inestimable blessing, life-giving and life-preserving influences of glowing sunshine, pure air, pure water, and wholesome food; of the importance of ventilation, drainage, disinfection, and vaccination, but also the absolute necessity of a proper use of these great gifts of nature, chemistry and discovery.

It has long been recognized as the peculiar province of the medical profession to aid the authorities and recommendations of the State in all matters connected with public hygiene; and especially is this true, in the efforts to avert an impending scourge or to abate the ravages of those terrible epidemics, which destroy life with the fearful rapidity of a tornado, whose pathway is marked with desolation and while they continue strike a whole community with terror and dismay.

The sacredness of human life and the inestimable value of health are incentives that can be always relied upon to secure the coöperation of all true physicians in every matter relating to the sanitary condition of the State and the lives and health of the people. It is in this relation that our profession can best reciprocate its obligations to the public and honor the trust confided to its keeping. There is indeed a vein of chivalry in the medical profession. It heeds the cry of suffering from the poor and lowly, and no pestilence stricken city has ever made an appeal for aid without meeting with a quick response. It has no secrets, no patents, but always holds its gifts of healing in trust for the public good. But busy as we are with the demands of an exacting profession, it is quite possible that many of us have failed to recognize in its true character, that other and important trust, the service that we could render the community by diffusing among the people by every available method, pertinent, reliable, comprehensive, popular sanitary knowledge.

Medical philanthropy and enlightened statesmanship, have made success possible in a grand sanitary movement throughout this country, by organized effort against preventable disease and unnecessary death, against the ills which torture humanity and enfeeble the State. The individ-

ual physician, each in his own sphere a power, has been foremost among all the agencies to mold public favor for organized hygienic work.

United in their influence, physicians have inspired confidence and a willingness among their patrons and neighbors to coöperate with them in their efforts to discover and remove the preventable causes of disease from their midst. When we cannot legislate, we can still teach; when we cannot command, we can still warn, and neither the existence nor absence of power, neither the expediency nor in expediency of interference by the proper authorities, can exempt us from the duty of knowing what is amiss in the sanitary condition of a community, and diffusing that knowledge far and wide.

Undoubtedly the first and most important step is the education of the masses in the essential facts of sanitary science. There never was so teachable a people as our own. The respect for science is wide-spread among them, and our public education has made a large body in every community sufficiently acquainted with the elements of science to receive with profit its practical application in matters of life and health.

The medical profession can best promote sanitary progress, by aiding in the dissemination of information as to the established facts of the etiology and protection from preventable disease, and the inevitable consequences of their disregard. This can best be attained through sanitary associations and publications, and especially by calling to our aid that important agency and instructor, the secular press, which has indeed become in this country for the citizen what the school is for the child.

Groaning night and day under the weight of its mighty energies to keep pace with the advancement of civilization, commerce, science, art, social, political, and religious activities of the age, the press wields the mightiest power for influence in the land.

It is characteristic of the American mind in its inventive genius and practical application, to utilize every power within its reach, to make subservient every agency to its interests, and there is no nation on the globe where the masses of the people absorb so much reading matter from the infinite variety of publications. The newspaper in this country is not only one of the luxuries, but is almost a necessity in every family; it is true it has its shortcomings and some objectionable features in its tendency to sensationalism, and oft *quasi* advertisement of quackery, in its apparently editorial endorsement of the wonderful cures of some secret or patent medicine; yet it is undoubtedly an institution of the greatest value and power for good, and should be utilized by the medical profession and sanitarians in the diffusion of hygienic knowledge among the people.

In the furtherance of this thought, I offered some suggestions in an address which I had the honor of delivering at the annual session of the Third District Branch of this Association, in June last, on "The Popularization of Sanitary Science," and which, with your indulgence, I desire here to reproduce.

My proposition was this, "That the medical organizations of this State shall be invited to appoint annually a special committee on 'Popular Sanitary Science,' whose duty shall be to prepare or supervise familiar articles for the secular press on subjects involving the care and protection of life and health of the individual and of the community, in accordance with the accepted principles of sanitary science. That State and local boards of health shall also be solicited and urged to publish for free distribution, through the medium of the public schools, tracts on practical sanitation."

From some such plan as I have thus indicated, or the organization of a Central Bureau or Council of Hygiene and Public Health connected with this Association, there would emanate a flood of light and practical knowledge, instructing an intelligent people in the principles, truths, and proper application of sanitary science; making possible a grand sanitary movement against preventable disease, and thus fulfil and magnify the trust committed to our profession. It is fitting that this Association, having a community of sentiment relating to the honor, the interests, and the usefulness of the medical profession; and within and around it the elements of permanency and success, should take the initiative step and afford an example worthy of adoption throughout this whole country.

Whatever of progress there may be in the coming century, in the advancement of our science in all that truly appertains to its highest mission, will emanate from a spirit of honest purpose, of profound study, of patient research, and a full recognition of the obligations resting upon each member of "the medical profession as a public trust."

ANTISEPTIC LIQUID.

The following formula is in use in some of the hospitals and dispensaries as an antiseptic dressing:

Boric acid, 240 grains.
Salicylic acid, 30 grains.
Water, 2 pints. Dissolve.

FOR CARDIAC DROPSY.

R—Digitalis, gr. xij.
Sennæ fol, 3 ss.
Aquæ bullientis, 3 vj.
Fiat infusum, et adde:
Sodii iodid, 3 ij.
Sodii phosphat, 3 vj.
M.—S. 3 ss every three to six hours.

—Gerhard.

ORIGINAL ARTICLES.

THE SURGICAL TREATMENT OF NON-PEDUNCULATED ABDOMINAL TUMORS.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY HENRY O. MARCY, A.M., M.D., L.L.D.,
OF BOSTON.

The ovarian cystoma which develop without a pedicle are rare, and yet are met with sufficiently often to make their study of interest and practical importance. They have been called intra-ligamentous, under the belief that they develop within the folds of the broad ligament, but I have never been able to demonstrate such origin. The explanation offered is that, by some error of development, the embryonic ovary becomes displaced. It has also been assumed that adhesions of the ovary to the folds of the broad ligament might cause these to grow with the tumor, and thus form a capsule over it.

The ovary, when not diseased, is often found with some degree of variation of attachment, as well as distribution of vessels. The pedicle may be so short that the deeper portion is almost, or quite within the reflexion of the peritoneal investment of the ligaments. When such a part becomes cystic, it will, of necessity, in its development, carry before it the peritoneum, and with it portions of the broad ligaments. Every operator, of considerable experience, has met with examples of this class of cases, and it has happened to me to find them in considerable variety, both as to the character of the growth and its origin. The variation in point of development will cause a change of relationship of the surrounding organs. The uterus and bladder may be carried quite upwards and to the side opposite the point of origin, when this is nearly central; if it commenced anterior to these organs it will be crowded into the pelvic basin; if posterior to the uterus, the cyst may be deeply planted within the pelvis. I have removed, with great difficulty, such a cyst, multilocular, within a few weeks, where the tumor pressed quite down into Douglas' cul-de-sac, behind the uterus and bladder, completely filling the pelvis.

The attachments also vary greatly in their appearance. They may be thick and vascular, the ligaments so changed as to be recognized with difficulty. In one case, a dermoid cyst, weighing about eight pounds, but the tumor more solid than fluid, the outer fold of the right broad ligament, which was distinctly hypertrophied throughout, was carried over the tumor quite to the base of the liver. In another, a large monocyst, the development appeared to be beneath the peritoneum, posterior to the ligaments, extending

behind the cæcum, quite to the root of the mesentery.

The cysts of the broad ligament are usually single, but they vary considerably in character, two of the most difficult of removal which I have ever met having been proliferous, or papillary growths. It is important for the physician, as well as the surgeon, to be familiar with the varying phases of such development of pelvic tumors, because of diagnosis, as well as treatment. It may and often is impossible to differentiate clearly these growths before section, but the diagnosis must be determined sufficiently to decide upon exploration; as early operations are advised in order to avoid complications which, in their further development, add very greatly to the difficulties and dangers of removal.

The exact knowledge of pelvic tumors must often remain uncertain until after exploratory section, and the most experienced observers are not seldom the least sure of conditions which may exist. Where this is advised, it may seem almost superfluous to add, that the operator should do it with all the care requisite to meet the demands of modern surgery, that he should be prepared for any emergency, and deal with the factors involved therein.

We all remember the intense interest with which, for many years, the disposition of the pedicle of ovarian cysts was held in consideration. It may be assumed that few would now question its treatment by the intra-peritoneal method, with, in all aseptic cases, the closure of the abdominal wound.

The more general method, advised for the treatment of a large class of cystic tumors without pedicle, is a resection of as much of the cyst-wall as possible, and carefully stitching the retained portion to the lips of the abdominal wound, thereby shutting off the general peritoneal cavity, and treating the remaining cyst-pocket as an open wound with drainage. Even this is oftentimes exceedingly difficult, and the resulting mortality rates, in the hands of our most expert operators, are very large.

In the treatment of solid tumors of the pelvis, uterine growths especially, a great majority of operators still follow this method in a modified way, by making, so to speak, a pedicle out of the lower portion of the uterus, and attaching it, after constriction, extra-peritoneally, with the object of making it an external wound. The arguments urged in favor of these methods are similar to those, at an earlier day, advanced for the external treatment of the pedicle of ovarian cysts by the clamp, etc.

In a certain very large measure, the objections to this method of treatment are those which caused the abandonment of the extra-peritoneal treatment of the pedicle, greatly emphasized. Those who attempt the entire removal of the

growth and the closure of its base of attachment, do it by ligation in section, with the parts oftentimes so imperfectly secured, that great danger from hæmorrhage ensues, and frequently loss of life. Most operators who thus treat the basic attachment of the tumors hold subsequent complications in such fear that they do not deem it advisable to close the abdominal wound without drainage which, of itself, is an added danger of serious character.

The latest publication upon the subject by Dr. Meredith, of London,¹ I quote at some length, since it gives the method usually adopted in the Samaritan Hospital, where in all abdominal surgery the drainage tube is in general use.

Complications arising from extension of the growths beneath one, or possibly, both broad ligaments, with accompanying upward displacement and close adherence of the urinary bladder to the anterior surface of the tumor, as a consequence of its original development from the lower segment of the uterine body, often necessitates extensive enucleation in order to form a pedicle for the application of the *serre-nœud* wire. Occasionally, in such instances, the removal of the uterine appendages may be found feasible, and should then be performed in place of the alternative operation of hysterectomy. But, more often than not, in cases of such nature as that above described, the first-named procedure is not available with safety, and the major undertaking has to be faced. The chief dangers entailed thereby are due to *hæmorrhage*, which must, in the first place, be avoided by securing the ovarian vessels in either side of the uterus. This is to be effected by transfixion and ligature of both broad ligaments below the level of the uterine appendages, and followed by their subsequent division after means have been taken to control the return circulation from the upper portion of the tumor, by the use of compression forceps. The next step required is that of freeing the displaced bladder from its connections with the anterior surface of the tumor. With this object, a horizontal incision through the capsule of the growth, beginning and ending, at the seat of ligature of the broad ligament, is carried across the front of the tumor, passing at a level of half an inch, or rather more, above the upper limit of the adherent bladder, which is then stripped downwards sufficiently to avoid its subsequent inclusion in the *serre-nœud* wire. Should these means not suffice for securing a suitable pedicle, resort must be had to further enucleation, necessitating the constriction of the base of the tumor by the use of an elastic ligature twice looped, and secured by clamping with artery forceps. Care should be taken to include in this ligature both the ovarian pedicles, and also the free border of the previously divided capsule connected with the fundus of the bladder. A horizontal incision through the uterine capsule, connecting at either end with the seat of ligature of the broad ligament, is now carried across the posterior aspect of the tumor, the base of which is then rapidly enucleated sufficiently to admit of the application of the *serre-nœud* wire, below the level of the elastic ligature, which is subsequently removed. The ultimate success of the operation, as before stated, depends in great measure upon the proper adjustment and management of the stump, by the adoption of means for ensuring the early protection of the peritoneal cavity from the dangers entailed upon it by the necrosis of the tissues constricted by the wire. The tumor having been cut away, after transfixion of its pedicle by a stout pin passed immediately above the wire, the distal portion of the remaining stump is to be trimmed down as much as

possible, and its raw surface is then covered in by lacing together the edges of its peritoneal investment with a continuous suture. The margins of the divided parietal peritoneum are now accurately adjusted around the stump in the groove formed by the wire, before being closely united at its upper border by a silk suture, which should also include a fold of the peritoneum covering the posterior aspect of the stump immediately below the wire. The ends of this stitch are then cut short, and the rest of the abdominal incision is closed in the usual manner. Finally, the stump is surrounded and covered in with dry, absorbent dressing, which should be left undisturbed for at least five or six days.

In an interesting paper published by Dr. Skene,² of Brooklyn, after emphasizing the process of enucleation quite as I have practiced it for years, he advises subsequent treatment as follows:

The management of the ligaments after the cystoma is removed, is first directed to the control of hæmorrhage. In some cases a general oozing is all that there is. Occasionally a wounded vessel here and there needs ligating. When the cyst extends deep down into the pelvis there is often very troublesome bleeding from veins. These should be ligated, if possible, but if that cannot be done, pressure with a hot sponge should be tried, and if that fail, styptics may be used. The ligamentous capsule now presents a pouch, the inner surface of which is raw, and from which there will be some bleeding and much serous oozing. This should be treated as follows: The upper portion of the opposing sides should be folded in so as to bring the peritoneal surfaces together, and these should be fixed by a continuous catgut suture. The suturing should begin on both sides, and be from the sides toward the centre, and close the parts, except at a point beneath the abdominal wound, where an open space should be left for the drainage tube. If the ligaments thus brought together by sutures can be brought up to the lower angle of the abdominal wound, they should be fixed to the abdominal wall by silk sutures passed through the ligaments on each side of the opening for the drainage-tube, and then through the wall of the abdomen. When the ligaments cannot be brought up to the wall of the abdomen a drainage-tube without side openings should be carried down to the bottom of the cavity.

While this mode of treatment is perfectly satisfactory in suitable cases, there are difficulties attending the operation in exceptional cases, and hence certain dangers. The cyst-wall may be easily torn, and hence the danger of leaving portions of it. When this happens it is necessary to destroy the secreting surface. This may possibly be done by applying pure carbolic acid. The most difficult part of the operation, in some cases, is to stop the bleeding. This has been referred to; but I may say further, that the oozing at the time of operating, and the liability to suppuration which may occur afterward, render the convalescence rather tedious in many cases.

The late Dr. J. F. Miner,³ of Buffalo, in a paper first published in 1869, in the *Buffalo Medical and Surgical Journal*, upon "Ovariectomy by Enucleation," furnished a contribution to the medical profession of permanent value. He taught the practicability of enucleating the cyst of the ovary from its peritoneal investment, a histological fact long known, but never made available in surgical practice, until brought forward by Dr. Miner. This most distinguished

¹ "Present Position of Abdominal Surgery." *Lancet*, April 19, 1890. Page 836.

² "Intra-Ligamentous Ovarian Cystoma." *N. Y. Medical Record*, April 19, 1890, p. 438.

³ *Transactions of International Medical Congress* 1876, p. 810.

surgeon sought to make of practical value this fact. He states:

There is no need to point out the advantages of this plan. Those, who have studied the history of ovariectomy, and who are familiar with the difficulties and objections which may fairly be urged against the ordinary methods of procedure, will at once perceive that, if enucleation is successful, there is no pedicle to keep open the lower angle of the wound, or to drag upon the parts. No unfavorable adhesions of the pedicle, no wires to be discharged by suppuration, and no crusts of burned tissue to be provided for. The abdominal cavity has simply been opened, and the diseased part removed, all that is left behind is capable of life.

The stripping of a large portion of the peritoneal investment of the cyst, and returning it within the peritoneum, as advised by Dr. Miner, offers little if any advantage over the use of the ligature in tumors where the pedicle is well-defined. The fear of hæmorrhage, the too general septic conditions, the returning within the peritoneum of a considerable portion of superfluous tissue, caused the method of Dr. Miner to fall into disuse. However, a modification of it, which I have used for a number of years without exception, is of great practical value. It consists in sewing off the pedicle, usually with several double continuous sutures, and then dissecting the peritoneal investment away from the cyst, at its base, to the extent of about an inch upon either side, and then, by a sero-serous continuous *tendon* suture (stitches taken parallel to the cut tissues), inverting the divided edges. The advantages which this procedure offers are, that the base is constricted sufficiently tightly to control hæmorrhage without producing necrosis or undue nerve tension, while the inversion of the divided edges leaves no freshly cut surfaces for infection.

The cystic tumors of the pelvis which, for any reason, fail to develop a pedicle, almost without exception may be safely treated by a modification of this method. The tumor, if cystic, is emptied of its contents as usual. The peritoneal investment is stripped from the cyst, which is removed by enucleation. Bleeding vessels are temporarily secured by pressure forceps or torsion. The investing tissues are seized by strong clamp forceps and drawn upward by an assistant, so as to define clearly the basic attachment of the growth. Then, with a double continuous tendon suture, they are sewed evenly through, as deeply as convenient beneath the attachment of the cyst, their entire extent, not seldom several inches in length. This completed, the hæmorrhage is securely controlled, and the redundant tissues are trimmed away with scissors, leaving only sufficient material for the inversion of the divided edges by a sero-serous continuous suture. In a very considerable number of cases of this type, I have been enabled to complete safely the operation, and to close the abdominal wound, where, otherwise, it would have been impossible. In two instances the line of the suturing measured about 9 inches. In no

case have I had complication of secondary hæmorrhage, or septic infection.

In illustration I quote from the record of the Boston Gynecological Society the report of a recent specimen, presented October 10, 1889:

Dr. Marcy presented an inflated unilocular cyst of the right broad ligament which he had removed at his hospital the previous week, assisted by Dr. A. P. Clarke, of Cambridge. The case was one of exceptional interest in that it had been allowed to develop until the sac and contents weighed 42 lbs. The girth of the patient below the umbilicus was over 40 inches. The operation was at last necessitated on account of dyspnoea and impeded circulation. The cyst had developed from the right broad ligament, not only without pedicle, but had carried up before it a fold of the peritoneum from its attachment in the median line to a point posterior to and on a line with the head of the cæcum. The question of its removal, therefore, was of difficult solution. A portion of the cyst wall could be brought into the line of the abdominal incision and stitched to the peritoneum, then drained and allowed to close by granulation. This necessitates, at the best, a long and tedious convalescence, rendered doubly objectionable from the weak and exhausted condition of the patient.

The wall of the sac, along the border of its attachment, was covered by extraordinary varicose veins. This seemed to threaten unusual danger from hæmorrhage. The emptied cyst was put on tension and, commencing at a considerable distance from its attachment on either side, the peritoneal investment was divided (as shown upon the inflated specimen), and the cyst was enucleated. The divided edges were caught and held by three or four pairs of Spencer Wells' compression forceps, while Dr. Marcy sewed through its base, with a double tendon suture in an even, continuous seam, measuring about 9 inches in length. Owing to the extraordinary size of the vessels, a second line of sutures was carried parallel to the first through the double fold of the peritoneum, about half an inch nearer to the median line. The superfluous tissues were resected parallel to this, and the peritoneum was intrafolded by a line of continued tendon sutures, serous in character, the needle traversing the tissues parallel to the cut edges. The abdominal wall was closed in Dr. Marcy's usual method by four layers of tendon sutures, and sealed by iodoform collodion.⁴

The advantages of the above method are too obvious to require special mention. The cyst is entirely removed, the basic attachment is closed, constricted, but not devitalized by the even, continuous double suture, applied by means of the long curved needle set in handle with eye near the point, such as is most conveniently used in hernia, and which is familiar to most American surgeons. The tendon suture is preferable to catgut, but either, properly prepared, is trustworthy. Carefully sewed in the above manner, there can be no danger from hæmorrhage. The inverted serous surfaces leave no oozing stump or uncovered wound for absorption. The tissues lie evenly without strain or tension. Lymph in a few hours covers in the suture material and wounds made by the needle. The abdominal cavity, if necessary, is flushed with sterilized water, and the wound closed without drainage. Care must be taken not to include a ureter, not to pierce the bladder, or rectum; but the danger of sewing

⁴ The patient was discharged at the end of the third week, union primary.

deeply in this way is really quite less than in the tying off piecemeal by the interrupted suture, as usually done.

There are cysts which, from changes of an inflammatory or other character, cannot be enucleated by the easy process of stripping the investing peritoneum with fingers. The experienced operator, however, will, by a painstaking dissection, usually succeed in saving the surrounding peritoneum. Fallopian tubes which have become pus sacs are often very troublesome in enucleation, but it can generally be effected without rupture and consequent danger from infection. Where the abdominal cavity is septic then drain, but not otherwise. Pelvic abscesses are obviously to be excluded from consideration by methods such as are under discussion.

It is equally important to advocate in this connection, the treatment of the remaining basic tissues in all cases of supra-pubic hysterectomy as well as the semi-solid tumors of the ovary, dermoid cysts, and cysts of the broad ligaments which are often found without a pedicle. Thanks to the labors of Apostoli, of Paris, it is a conceded fact that laparotomy for fibroid tumors of the uterus is considered less necessary than formerly. However, it cannot be doubted that a considerable number of cases are not amenable to treatment by electricity. Where the growth seriously imperils the life of the patient, and the surgical removal of the tumor is wisely taken into consideration, the importance of a pedicle consisting usually of the elongated cervical tissue is a marked factor in the problem, without which most surgeons decline operating. Nevertheless, it is frequently true that the uterine myoma, which fills the pelvic basin, interfering with the functions of its organs, thereby most often demands removal. When thus located, the cervical tissues rarely afford material for furnishing a pedicle, and the external treatment of the stump is impossible.

It is a well known histological fact that the growth of uterine myoma of necessity causes the formation of so-called capsular investment, developed from the surrounding uterine tissue. In rare instances, where the tumor is single, and the uterus has not become too greatly deformed, it may be removed from its capsule, and the uterine wall closed by suturing. The interstitial growths, however, usually develop from different centres and so alter the structure of the organ that the removal of the entire uterus is demanded. Under these conditions, the most available method of procedure consists in the division of the capsules and the enucleation of the growths, controlling hæmorrhage by pressure forceps. After the size of the organ is thus reduced, the remaining portion is put on tension, and the base is sewed evenly through, as near the junction of the peritoneal reflection from the bladder and rectum as

is judged advisable, and the redundant tissue is cut away. These are divided by a V-shaped incision, so as to allow the easy coaptation of the peritoneal investment by a sero-serous continued suture, in the same manner, as advised in the treatment of non-pedunculated cysts. If the condition of the cervical canal seems to demand it, it should be treated by a drop of liquid crystals of carbolic acid, a strong sublimate solution, or the mucous membrane may be cored out by the knife.

When the condition of the growth will allow, it is a great convenience to first push down over the tumor the so-called rubber-dam which is constricted at its base by an elastic ligature. This simple procedure, suggested to me by the common practice of the dentist, encircling the base of the tooth while filling, oftentimes saves the loss of much blood and proves an exceedingly convenient protection to the abdominal organs. When hysterectomy is thus performed, hæmorrhage is under far better control than by the strong ligature which constricts to necrose the tissue. The pressure upon the parts enclosed is even and continuous, the sutures are speedily covered by a fresh deposit of lymph, and open wound surfaces are entirely avoided. Strain and pressure upon the bladder and rectum are minimized and generally entirely wanting. The abdominal wound is completely closed, rendering drainage not alone unnecessary, but superfluous, and when the abdominal wound is properly sealed with iodoform collodion, subsequent infection is impossible.

There can be little doubt that the advantages of this method are many, and yet they are all based upon the fundamental principles of antiseptic surgery. Without a mastery of these principles and a familiarity with their application and religious exactitude in carrying them out, these operations should never be undertaken. The buried animal suture, unless introduced aseptically, thus hidden away in the remote recesses of the body, is sure to be attended with most disastrous results. But when itself, *aseptic* and *aseptically* applied in an *aseptic* wound, it becomes one of the most important factors in modern surgery, the value of which is as yet greatly underestimated and scarcely properly understood.

JACCOUD'S NUTRITIVE ENEMA.

An enema of great nutritive power, and valuable in cases of cancer of the stomach, closure of œsophagus, etc., is produced by M. Jaccoud, as follows:

- R. Beef broth (freshly made) 8 ounces.
- Wine, 4 ounces.
- Yolks of eggs, 2.
- Dry peptone, 1 to 4 drachms.

M. Sig.—Mix and make an enema to be injected in small portions at intervals during the day.

NASAL REFLEXES.

Read before the American Rhinological Association, Louisville, October, 1890.

BY A. B. THRASHER, M.D.,
OF CINCINNATI, O.

There is perhaps no department of modern rhinology more interesting to the specialist or more prolific in material than "nasal reflexes." Indeed, so fertile has been the field that much opprobrium has fallen to our lot by the great diversity of diseases and multiplicity of symptoms which we have attributed to this cause. It does not seem at all strange to the surgeon that *morbus coxarius* should attract our attention by pain in the knee-joint; but he is skeptical when we refer a post-auricular neuralgia to a hypertrophic turbinate. For a thorough understanding of these neuroses we are perhaps more indebted to Hack, of Freiburg, than to any other one man. His monograph¹ on the subject referred to cases of asthma, nightmare, cough, migraine, sneezing, neuralgias, swelling and redness of the skin of the nose, etc., which he had for the most part successfully treated by cauterizing the erectile bodies of the anterior extremities of the lower turbinates.

In 1872 Voltolini² reported a case of reflex asthma due to the irritation caused by a nasal polyp, and cured by the removal of the growth. Since then numerous cases of asthma have been reported as due to nasal disease, and a large per cent. of asthmatics are now cured by the rhinologist. In 1882 Dr. Carl Seiler,³ of Philadelphia, reports two cases of reflex cough arising from intra-nasal lesions. In the same volume of the "Archives" Dr. Wm. H. Daly, of Pittsburgh, reports cases of hay fever as caused by intra-nasal disease. His observations have been corroborated by Dr. Jno. O. Roe, of Rochester, and since by a host of others both in America and abroad. The same year Hack reports⁴ a number of nasal reflexes. The next year John Noland Mackenzie, of Baltimore,⁵ advances the theory that there are in the nose certain sensitive areas, located more especially over the posterior extremities of the inferior and middle turbinates and the adjacent portion of the septum, which, when subjected to disease or irritation, give rise to the so-called nasal reflexes. Dr. Mackenzie's able paper excited no little attention, and while his conclusions have been somewhat modified, yet they served as an excellent means of directing the rhinologist to a more careful examination into this interesting subject. The same year Dr. Elsberg⁶ mentioned many nasal reflexes, some of which appear to be only remotely connected with the local lesion. Baratoux⁷ says that in a certain number of cases cough and sneezing can be caused by irritating the posterior part of the septum, and he attributes certain reflexes to the pressure on this part of the swollen turbinate or a

polyp. Dr. Cartaz⁸ describes an interesting case of epileptoid convulsions produced by touching an ulcer located on the posterior extremity of a hypertrophied lower turbinate.

Hering, of Warsaw,⁹ describes numerous cases of nasal reflexes. He gives prominence to the pressure of the middle turbinate against the septum, or to the irritation of the middle turbinate by inflammation, by inspissated secretions, or by the pressure of a polyp. Mr. Lennox Browne,¹⁰ under the heading of neuroses of the larynx, mentions a case of epileptiform convulsions which he attributes, and I think quite properly, to intra-nasal irritation. Bosworth¹¹ mentions two cases of salivation as due to intra-nasal disease, both in elderly people, and in both cases local treatment was successful.

Gruening,¹² of New York, reports cases of ocular trouble as due to disease of nose, and similar observations have been made by Cheatham, of Louisville,¹³ and by Bettman, of Chicago.¹⁴ Lennox Browne¹⁵ reports a case of glaucoma cured by the removal of a nasal polyp.

These cases and symptoms might be repeated, almost without limit, but I will conclude with two examples of reflex salivation, which have recently fallen under my observation.

Case 1.—Mr. M., æt. 68, musician, nervous temperament, some symptoms of paralysis agitans. Was referred to me July 24, 1890, by Prof. Forcheimer, for obstinate salivation, which had been present since an attack of the "grip" three months before. There was a chronic naso-pharyngitis without marked hypertrophy. The turbinated corpora cavernosa of both nares were engorged and hyperæsthetic, and the pharynx and buccal cavity were filled with an aqueous secretion. The saliva could be seen dripping from Stenson's and Wharton's ducts, and its presence was a serious inconvenience to the patient and of great detriment to his business. The reduction of the local hyperæsthesia was followed by a cessation of the salivary flow.

Case 2.—Mr. N., æt. 51, referred to me by Dr. Ashburn, of Batavia, O., for excessive salivation. He had been subjected to a severe bodily shock five weeks before, since which time his nervous system had been seriously disordered. For four weeks the salivary flow had been so great as to produce marked discomfort. In this case there was present chronic hypertrophy of both lower turbinates, now accompanied by excessive hyperæsthesia. Dr. Ashburn agreed with me in thinking that we had to deal with a reflex salivation from intra-nasal disease, precipitated by the nervous shock lately received. The patient's general condition was so bad that he was unable to undergo any local treatment other than palliative, and I am unable to report the result.

Among the affections which have been attributed to intra-nasal disease or irritation may be

mentioned: asthma; hay fever; cough; spasm of glottis; gastralgia; dyspepsia; tumefaction and redness of nose; oedema of conjunctiva; conjunctivitis; photophobia; epiphora; asthenopia; glaucoma; scotoma; salivation; cardiac palpitation; disorders of smell, taste, hearing and sight; huskiness of voice and aphonia; exophthalmic goitre; rheumatic pains; vertigo; chorea; epilepsy; melancholia; agoraphobia; aprosexia; neurasthenia; migraine; cephalalgia; neuralgias; nocturnal enuresis; many uterine disorders; affections of the genito-urinary mucous membrane, etc. The very number of these reflexes is so great that care must be exercised to prevent mistakes.

Dr. Bosworth has very properly¹⁶ eliminated such of these affections as are probably produced in some other manner than by reflex action. For example, some neuralgias may be caused by pressure on a nerve trunk of engorged tissues and vessels. A conjunctivitis may arise from an extension of inflammation by continuity of tissue through the nasal duct.

As specialists we must carefully examine the nose; but as physicians we must look still further in our search for the often obscure *causæ morbi*. We must not let our zeal as specialists overcome our judgment as physicians.

But the reflex being admitted, and the local origin being some intra-nasal lesion, what, let us inquire, produces the reflex?

Hack seems to believe that the vaso-motor paresis of the anterior turbinates, as a rule, causes the irritation which gives rise to the reflex. John N. Mackenzie thinks that the trouble is due to an implication of the nervous ganglia or nerve centres, and that this involvement may be due to frequent irritation of the intra-nasal nerves or to some other impairment of the nervous system, or to a neurotic dyscrasia plus the local intra-nasal irritation.

There must be a nervous temperament, a diseased condition of the nerve centres, and then a local intra-nasal lesion. Dr. Mackenzie's reasoning on this subject is so logical, and his conclusions so just, that I at least endorse his idea of duality in these neuroses, even if I cannot wholly accept the trinity.

That the first irritation of a previously healthy nose in a person whose nervous centres were normal would produce a reflex disturbance I very much doubt. But when this nerve shock has been experienced repeatedly, then it is easy to believe that there might be some impairment of the nervous ganglia because of their over-stimulation. That this abnormal condition of the central nervous ganglia may be more easily produced in a person of nervous temperament, either hereditary or acquired, I can readily believe; and that it may be produced by extra-nasal causes seems to me also possible.

In Case 2, as related above, the patient gave a

history of chronic rhinitis extending over a long period before any reflex symptoms were noticed. Then came the nervous shock, and from extra-nasal causes there was produced the pathological condition of the central nervous system. Then did the intra-nasal irritation call forth a reflex, and then only because of the abnormal excitability of the central ganglia which had been precipitated by other causes.

The engorgement of the erectile bodies from vaso-motor paresis differs essentially from that of true inflammation.

Dr. W. C. Glasgow, of St. Louis,¹⁷ very clearly directs attention to the swelling of the cavernous bodies in some cases without the ordinary symptoms of an inflammatory process. In these cases he has noticed "great swelling of the cavernous bodies, abnormal paleness of the mucous membrane, and profuse discharge of the limpid fluid." There is not increased redness nor an increased supply of normal blood, as would be the case in congestion or inflammation. This condition of vaso-motor paresis is frequently present in the cases of nasal reflexes; but if it is always present it is sometimes masked by active inflammation, so that we see only the ordinary symptoms of congestion and inflammation.

A mechanical, chemical, or thermal irritant may produce this disturbance of the vaso-motors and the engorgement of the erectile bodies. Every local irritation is conveyed by the afferent nerves to the central ganglia and reflected by the efferent to the point of sensation. The repetition of this irritation beyond a certain point, varying in accordance with the condition of the ganglion cells, produces an over-excitability condition of the central ganglia, so that a less and less amount of peripheral irritation is required to produce reflex phenomena. This nervous irritation may become constant and the accompanying reflex be continuous.

One cannot always be positive that a certain symptom is due to a reflex nasal neurosis. Hack has pointed out a test to determine the reflex character of an affection. This is made by applying cocaine to the erectile bodies of the nose, and when fully anæsthetized the reflex phenomena should be abolished. This, however, has not proven a certain test, as many true nasal neuroses are not much affected by the local use of cocaine. Usually the reflex phenomena can be either excited or exaggerated by touching the sensitive area of the nose with a probe, but this is not always true. There will always remain a certain number of cases in which the phenomena are supposed to be produced by intra-nasal irritation, but where it will require the removal of all nasal abnormalities before a positive diagnosis can be made.

There appears to be but little connection between the severity of the reflex symptoms and

the amount of intra-nasal affection. Very little trouble in the nose may give rise to reflex phenomena of great magnitude, and *vice versa*. This fact has many times led to a mistaken diagnosis, as the nares have been pronounced normal when there was present a sufficient amount of inflammation or irritation to give rise to severe reflex trouble. Nor does it by any means follow, when we have to deal with a cough or a supra-orbital neuralgia in a patient presenting marked hyperæsthesia and disease of the nasal mucosa, that the cough or neuralgia is reflex and produced by the evident intra-nasal lesion. The cough may be due to laryngitis and the neuralgia to malaria, and there may be no connection with the nasal disease. Many a nose has been sprayed and burned and cut, and all in vain, for the relief of a symptom which had no connection with the nose. A hypertrophic turbinate does not always give rise to serious trouble, and it is not always necessary to straighten a crooked septum, or cut off a small cartilaginous septal spur.

Since it is probable that the cause of these reflex phenomena may be found in the nose and in a dyscrasia, it is well to direct our efforts at cure in two directions, viz.: to rid our patient of the intra-nasal disease, and at the same time to give attention to the underlying dyscrasia. However skeptical we may be as to the good effects of drugs, we would hardly dare to treat a patient manifestly a subject of lues without mercury and iodide of potash. And if a patient has a periodical supraorbital neuralgia, with an enlarged spleen and a well-marked cachexia, we would not content ourselves with cauterizing the turbinates, however large and inflamed they might be, but would at the same time administer the bark and arsenic and iron to meet the indications for constitutional medication.

The character of the constitutional dyscrasia will determine the constitutional treatment. Just so of the local treatment. Whether a septal spur is removed by a snare, or saw, or drill, or galvano-cautery, so that in the end it is well removed, makes but little difference. Treat the local disease so as to remove it as rapidly as possible, with as little resulting damage to the intra-nasal mucosa.

In these reflex disturbances it becomes apparent that the specialist should be broad in his ideas, not viewing the whole world through his nasal speculum, or not expecting to see the cause of all bodily ailments reflected in his rhinoscope.

AN EASY AND SIMPLE METHOD OF PREPARING MACROSCOPICAL SPECIMENS OF THE EYE.

Read in the Section of Ophthalmology at the Forty-First Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY J. H. THOMPSON, M.D.,
OF KANSAS CITY, MO.

At many of the large clinics both at home and abroad a quantity of valuable pathological material is wasted because there has been no easy or simple way to preserve it. This is particularly true in ophthalmic institutions, where the attendants are not usually experts in pathological technique or are too busy to attend to the details necessary for a proper mounting of a specimen. If it were not that preparations of the diseased eye are often very valuable the excuse "want of time" would be acceptable, but the result of a little time and work in this line is often so gratifying, that I feel justified in calling your attention to the method I pursued in the preparation of this specimen. Perhaps it is unfortunate that in the hardening process much time is consumed which cannot be avoided, but the technique is easy and can be acquired by following closely the method herein advised. When the eye is removed wash it in cold water, wrap it in a piece of paper and freeze it hard by inserting it in a box of cracked ice and salt. It should remain not less than an half hour in the freezing mixture, remove it, and quickly with a sharp knife or flat razor cut off two sections, one should extend from the cornea to the equator of the eye opening the anterior and vitreous chamber but should avoid injuring the lens if possible. It is only necessary to open the anterior chamber in one place so that the hardening fluids may easily pass in, the other section, much larger than the first, should be cut from opposite surface of the eye and should extend from the edge of the cornea to the posterior pole of the eye on a plane corresponding to the horizontal visual plane and parallel to the optic axis. If the eye is well frozen this can be done without crushing the organ or disturbing the relation of the internal structures, but the lower cut must be so even, that when the eye rests upon a flat surface the scleral edge is in contact all round. The object is that being thus placed upon a piece of glass, when the vitreous fluid melts it will be retained within a scleral cup and hold the internal membranes and structures exactly as they were before the eye was opened. Of course it may be necessary to make the openings at other places to avoid cutting away the bases of tumors or certain diseased parts, but

¹ Ueber eine Operative Radical-Behandlung bestimmter Formen von Migraine, Asthma, Heufieber, etc., 1884.

² Die Anwendung der Galvano-Kanistik, Vienna, 1872.

³ Archives of Laryngology, Vol. iii.

⁴ Berliner Klinische Wochenschrift, 1882, No. 25.

⁵ Amer. Jour. of Med. Sciences, July, 1883.

⁶ Transactions A. L. A., 1883.

⁷ Revue Mensuelle de Laryngologie, December, 1885.

⁸ France Médicale, Vol. ii, 1885.

⁹ Annales des Maladies de l'Oreille, du Larynx, etc., 1886.

¹⁰ Diseases of Nose and Throat, p. 487.

¹¹ Diseases of Nose and Throat, Vol. i.

¹² New York Medical Record, 1886.

¹³ Amer. Practitioner and News, 1887.

¹⁴ Jour. of Amer. Med. Assoc., 1887.

¹⁵ Op. cit.

¹⁶ Op. cit.

¹⁷ Trans. A. L. A., 1885.

wherever made they should be as near opposite as possible.

Have ready a glass quart jar half filled with Müller's fluid, and a watch glass, which has glued to it with paraffine four long threads, place the frozen specimen flat on the center of the glass and holding the whole horizontal by suspending it by the threads, lower it into the hardening fluid and fix it an inch or so from the bottom of the jar. I usually use a cork stopper and by passing the threads through a hole in the centre can lower or elevate the specimen without disturbing it. The specimen should remain in Müller's fluid at least six weeks, which should be changed four times. At the end of that time it is ready for alcohol. Remove the eye from the bichromate of potash solution and wash it in a large quantity of water, being careful that during the washing process it is not injured. It is then placed in dilute alcohol twenty-four hours, 90° spirit four hours, and finally absolute alcohol, where it should remain until it is certainly dehydrated: twelve hours is sufficient time. From the alcohol it is transferred to a bottle of turpentine where it should stay until the turpentine has penetrated freely all the tissues, especially the sclerotic coat. It will do so in twenty-four hours, when the specimen has a transparent amber look.

Wherever turpentine will go melted paraffine will follow and inasmuch as we desire to paraffinize the specimen it is only necessary to keep it in melted paraffine long enough. Ordinarily paraffine melts at about 135°, so if the preparation is kept in an oven at that temperature or on a water bath it will suffice, but it is difficult to hold the temperature between 140° and 150° without a thermostat, consequently many men have neither the time nor the patience to carry out that part of the process. In the winter season the steam radiators in our office buildings have a temperature ranging from 130-150 degrees, so if the bottle containing the paraffine is placed on one of these the work can be done without watching and without danger of overheating. Place the bottle holding the eye and an ounce or so of turpentine in a temperature ranging from 130-150°. I usually put the bulb of the thermometer in the fluid and keep it there; from time to time put in pieces of the hardest purest paraffine; by pouring off the fluid, a few drams at the time and adding paraffine to make up the loss, the spirits of turpentine will be finally eliminated when the specimen will be saturated with melted paraffine in which it should remain at least two days. If the temperature should go down and the whole solidify, no harm is done, it can easily be remelted. Some advice to remove the specimen from turpentine directly into melted paraffine. In the eye it will not do, since the heat drives off the spirit from the scleral coat when the paraffine will not thoroughly penetrate, which renders the specimen useless.

The specimen is now ready for the cast. Make a strong paper cylinder one and one-fourth inch in diameter and two inches long, put an ordinary prescription paper on a flat surface, and pour some of the paraffine upon it, enough to cover a space larger than the base of the cylinder; remove the eye from the bottle and quickly place it flat in the centre of the paraffine disc on the paper; it will stick; then cover it with the paper cylinder which should not touch the specimen but should be pressed down into the hardening mass. Fill the mould full with the paraffine from the bottle and let it stand until it is hard. The cast in ordinary weather will not be thoroughly hardened inside of six hours.

If the cast is put in the clamp of a microtome very thin slices can be cut off, but since the best part of the specimen is one-third of an inch or more from the upper surface it is well to carefully pare away the cast either with a very sharp knife or better by working the instrument until the desired part is reached, resharpen the knife and make a section about one five-hundredths of an inch thick. To prevent the section curling some instruments have fixed to the knife a flattener, but an ordinary business card held edgewise on the section as it is cut will keep it flat. If the specimen is properly prepared the cast will be solid and contain no air bubbles, so when a thin slice is cut off of it, it will be without a break and hold a perfect section of the eye.

Procure from a photographer some old negatives, clean them and cut them into slices four inches long by one and one-half inches wide; have on hand some cover glasses one-hundredth inch thick, two by one one-fourth inches square; make a fixer of collodion and camphor chloral two parts to one. With a camel's-hair brush paint the collodion mixture on the slide over a space larger than the section, which should be then carefully laid upon it and covered with a piece of paraffine paper; it may then be pressed flat with the ball of the thumb. I usually flatten with an ordinary knitting needle; remove the paper, place the slide on a heated surface about 140°, until the paraffine begins to melt and the fixer turns opaque. The section is thus glued fast to the glass slide, so when the slide is put in a bottle of turpentine the paraffine is dissolved away nothing remains but the anatomical tissues. The slide may remain in turpentine indefinitely. From turpentine transfer to alcohol in sufficient quantity to dissolve out the turpentine, then to distilled water in which it may be stained by any of the ordinary aqueous stains. I prefer logwood stains for that purpose. When sufficiently colored the specimen is dehydrated in spirits and absolute alcohol, clarified with the oil of clover or spirits of turpentine, and mounted permanently in Canada balsam.

This process, called the paraffine imbedding,

has been extensively used by Dr. Reeves, of Chattanooga, but it has not been recommended in eye work, the celloidion having been considered the best. I have not succeeded with that method so well as I have with the one advised, and I believe that if you will follow the plan suggested in this paper, especially as regards the freezing and hardening process you will succeed by mounting some beautiful and valuable specimens.

CASE OF SARCOMA OF THE CHOROID —OPERATION—NO RECURRENCE IN NEARLY THREE YEARS.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY A. G. SINCLAIR, M.D.,

PROFESSOR OF DISEASES OF THE EYE, EAR, AND THROAT IN THE
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HOSPITAL, MEMPHIS, TENN.

Malignant intra-ocular growths are of so much importance that every case of the kind should be placed on record, and especially the results of treatment, whether favorable or otherwise, in order that we may learn at what stage of development the disease passes beyond the control of remedial measures. I therefore beg to occupy your time briefly with a report of the following case:

In June, 1887, I was consulted by Mrs. K., 40 years of age, who reported that three years previously she had lost the sight of her right eye while suffering from symptoms which, according to her description, were very like those of acute glaucoma, and that the organ had continued more or less irritable up to the time of presentation. On examination I found vision extinct; conjunctiva moderately injected; pupil somewhat dilated, and motionless; iris discolored; lens cataractous; tension plus 1; pain in the eye, forehead and temple. Although suspecting the presence of an intra-ocular growth, I determined, as my patient was a lady, and cosmetic effects were therefore not to be ignored, before proceeding to enucleation to test the power of iridectomy to overcome the glaucomatous symptoms above enumerated—knowing that if an intra-ocular tumor were indeed present they would soon reappear and render positive the indication for removal of the eyeball.

I performed the operation accordingly, and relief of several weeks' duration followed. The symptoms then recurred in all their former intensity, and on August 14 I enucleated the eye under etherization. Entire relief from all symptoms followed; the patient made a good recovery from the operation, and soon regained her strength and spirits, previously much depressed by her sufferings.

I sent the eye, hardened in alcohol, to the laboratory of the College of Physicians and Sur-

geons, New York, for examination, whence I received in due time the following report:

NEW YORK, November 23, 1887.

Dr. Sinclair, Memphis, Tenn.

Dear Doctor:—The microscopical examination of the eye sent to the laboratory is as follows:

Cornea.—The cuboidal cells of the anterior epithelium are distorted and separated from each other by larger and smaller irregular shaped spaces (probably due to drying in the air). There are also a number of spindle-shaped cells among the cells of the anterior epithelium. At the sclero-corneal junction there are a few scattered pus cells. Lying against the posterior epithelium of the cornea is a layer of spheroidal cells.

Iveal Tract.—Iris is swollen and ciliary bodies flattened on both sides. The choroid just behind one of the ciliary bodies contains a mass of small spindle-shaped cells about 5-7 mm. in diameter.

Retina and Opticus.—Rods and cones absent from retina and there is an increased amount of interstitial tissue. In places the retina is changed to a connective tissue lamina. The optic disc shows a moderate degree of excavation.

Anatomical Diagnosis.—Small spindle-celled sarcoma of the choroid, interstitial retinitis, optic excavation, circumscribed purulent keratitis. Very respectfully yours,

IRA VAN GIESON.

Nearly three years have elapsed since the operation; the patient continues in vigorous health, and there is no sign of a recurrence of the disease.¹

54 Madison street.

A VEST POCKET OPHTHALMOSCOPE CASE.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

BY FRANK TRESTER SMITH, A.M., M.D.,

OF CHATTANOOGA, TENN.

LATE ASSISTANT SURGEON, NEW YORK OPHTHALMIC AND AURAL INSTITUTE.

I present to the Section an ophthalmoscope case made for me by Meyrowitz Bros. in 1886, and which I have had in constant use ever since. It is made like a spectacle case, the open end being closed with a tightly fitting lid, or like a flattened pencil case such as is used by school-children. It is made of stiff pasteboard, or other light material, covered with morocco.



It presents the following advantages over the form in ordinary use:

1. Size. This is such that it can be carried in the vest pocket. The thickness is about half that of the wooden case.
2. Weight. Being smaller and made of lighter material, it is not as heavy as the ordinary form.
3. Shape. There are no corners and the edges are rounded off.

¹ There is still (Dec., 1890) no sign of a relapse.

4. As a result of the shape we have another advantage: It is dust-proof. The lenses are consequently more easily kept clean.

5. As a further result of the shape we have the advantage of greater durability. The hinges of the ordinary case are soon worn out.

6. It is never necessary to remove the handle from the instrument.

7. The ophthalmoscope can be kept in the case at all times except when in actual use. During office hours it takes too much time to be continually taking the instrument from the case with a lid. By removing the lid the ophthalmoscope can be placed in the case and taken from it more easily than from the vest pocket. The weight of the ophthalmoscope will prevent its falling out of the pocket in stooping.

I use the Knapp ophthalmoscope. The instrument with a tilting mirror would require a thicker case. There is no place in this case for an accessory lens. I find it more convenient to carry this in an eye-glass case in my vest pocket.

THE TORSION OF ARTERIES FOR THE ARREST OF HÆMORRHAGE.

Read at the Sixteenth Annual Meeting of the Mississippi Valley Medical Association, at Louisville, Oct. 9, 1890.

BY J. B. MURDOCH, M.D.,
OF PITTSBURGH, PA.

There is no subject of greater interest to the practical surgeon than the arrest of hæmorrhage. This remark is equally true whether the hæmorrhage comes from a wound accidentally inflicted, or one made intentionally, by the surgeon's knife.

Without the means of stopping the flow of blood from bleeding vessels, the surgeon's art would be greatly crippled, and surgical operations, where blood-vessels must be divided, would be impossible.

There is no sight so appalling as a formidable hæmorrhage. When a large artery is opened, the blood gushes out in an angry stream, the face becomes pale, the color leaves the lips, the respiration becomes sighing, the heart fails to beat, and death closes the scene. Without any knowledge of the circulation or nature of the blood, or of the means by which its flow from a wound could be arrested, what a terrible and mysterious sight it must have been to the early races of men to see one of their number perish from hæmorrhage. What, for instance, must have been the sensation of our first parent Adam, as he looked upon the wounds of his dead son Abel, with the stain of his blood upon the ground. Surgeons from the earliest ages have shared this dread of hæmorrhage, and have ever been striving for the best means of its control.

Upon no subject has our profession been more conservative than upon this one—the arrest of

arterial hæmorrhage. Since the time of Celsus, notwithstanding the numerous methods which have been proposed for this purpose, but two, viz.: the actual cautery and the ligature, have received the endorsement of the profession. But, if the profession has been slow to endorse new methods, its confidence once gained has been most unwillingly surrendered.

From the time of Archigenes, who practiced in Rome shortly after the time of Celsus, up to the time of Richard Wiseman, Sergeant-Surgeon to King Charles II, the red-hot iron was the sole method employed. Thus this method of checking hæmorrhage after amputation not two centuries ago, was the same as that used for fifteen hundred years previous. The pertinacity with which surgeons adhered to the use of the actual cautery after Paré's great discovery of the ligature, well illustrates the fear in which surgeons stood of hæmorrhage. They had used, and had seen their fathers use, the red-hot iron, and, notwithstanding the pain it caused and the interference with primary union, they were unwilling to discard the agent which long usage had taught them was successful.

In 1564, Ambrose Paré published his new discovery, which, to use his own language, "was taught him by the special favor of the sacred Deity." In this publication, as is well known, Paré demonstrated the value of the ligature as a hæmostatic. But, owing to the extreme fear of hæmorrhage, and the criminal neglect of surgeons, it was two hundred years before it was adopted by the profession, and then it came into favor through the influence of Sharpe, one of the surgeons of Guy's Hospital, London, who boldly championed the claims of the ligature to popular confidence.

Since this time nothing has dislodged the position which the ligature has held as a hæmostatic in the opinion of the profession.

The efforts made by Sir James Y. Simpson, of Edinburgh, to substitute acupressure, and the still more recent endeavor of Dr. S. F. Spier, of Brooklyn, to substitute constriction for ligation have most signally failed. The same statement may be made also in regard to torsion as a means of arresting arterial hæmorrhage. It has not received the support of the profession to any great extent, but unlike the other rivals of the ligature, it has had champions for hundreds of years, and still holds a place as a valuable means of arresting hæmorrhage. This subject has received but little attention by modern surgeons. The twisting of an artery to arrest bleeding is of ancient origin. It is spoken of by Celsus. A fact often observed that an arm or leg may be torn from the body with the loss of only a few drops of blood, no doubt suggested the method. It has been advocated by such surgeons as Amussat, Dieffenbach, Schroeder and Syme. But the credit of

bringing it prominently before the profession and establishing its efficiency is due to Mr. Bryant, the present distinguished surgeon of Guy's Hospital, London. At this hospital the ligature is seldom used, torsion being chiefly relied upon. Mr. Bryant tells us in the last edition of his "Surgery," that in two hundred consecutive amputations of the thigh, leg, arm and forearm, all of the arteries were twisted, one hundred and ten of them being the femoral artery, and that in no case was there secondary hæmorrhage.

Mr. Bryant says: "The physiological arguments in favor of torsion are very great, and the practical advantages seem to be no less. After seven years' experience in its practice, applied to vessels of all sizes, the femoral being the largest, I have had no mishap. I have observed that wounds have united more rapidly and kindly, primary union being the rule. There has been less constitutional disturbance after operation, and consequently, less liability to traumatic fever, pyæmia, and other complications such as we are all too familiar with in the practice of surgery. I have had stumps heal in a week, and the patient up in two weeks; without one single drawback, rapid and uninterrupted convalescence following the operation."

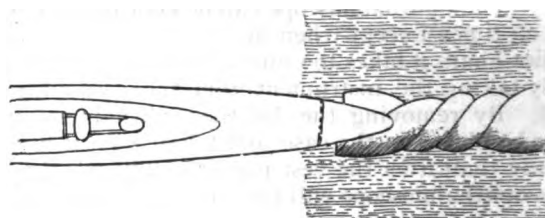
Having given this experience of Mr. Bryant, I desire now to give my own as observed at the Western Pennsylvania Hospital of Pittsburgh. At this hospital, torsion is almost exclusively relied upon to check the hæmorrhage from wounded arteries or veins, whether the wound be produced by the surgeon's knife or otherwise. My experience with torsion as a hæmostatic, dates back to the year 1872, when I became a member of the hospital staff. My colleagues had, previous to my connection with the hospital staff, been twisting arteries as large as the radial and ulnar. The facility with which this was done and the fact that the wounds healed kindly and without secondary hæmorrhage, induced me to follow their example, at first timidly, but with success came confidence. Having been successful in the amputation of a forearm with no untoward result, I ventured next to twist the brachial artery after the amputation of an arm; soon after this the axillary, and then the popliteal, and finally the femoral. And now, for the past eighteen years, torsion, for the arrest of hæmorrhage after all surgical operations, has been the recognized, and almost the only method resorted to at this hospital. It is to be regretted that records have not been kept of the number of larger arteries which have been twisted to arrest hæmorrhage.

The following is a table showing the number of arteries divided in cases of amputation where torsion has been resorted to for the arrest of hæmorrhage at the Western Pennsylvania Hospital:

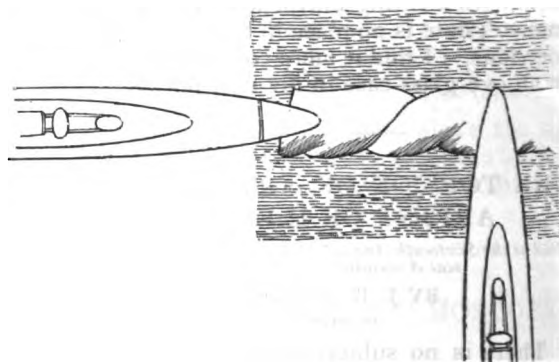
Femoral	116 times.
Popliteal	18 "

Axillary	18 times.
Anterior tibial	317 "
Posterior	317 "
Brachial	81 "
Radial	45 "
Ulnar	45 "

There are two methods by which the torsion may be applied, as is illustrated by the following cuts:



FREE TORSION.



LIMITED TORSION.

- 1st. Limited torsion; and
- 2nd. Free torsion.

In the first method, two pairs of forceps are required. The first pair grasps the vessel at its cut extremity, and pulls it from the sheath. It is then seized by the second pair at a point from one-half an inch to an inch above the cut extremity of the artery; this second pair being held at right angles to the long axis of the vessel. The first pair is then given three or four sharp turns.

By the second method (free torsion), only one pair of forceps is required. It is the one recommended by Mr. Bryant as not being so likely to injure the external coat of the artery. And this is the method which was adopted in the cases which I have given.

A good pair of forceps is required which will hold the end of the artery firmly, and that has no lateral motion, and with serrations blunt enough to obviate any laceration or cutting of the parts seized by the blades. The vessel should then be drawn out as in the application of the ligature, and three or four sharp rotations of the forceps made. In large arteries, such as the femoral, the rotation should be repeated till the sense of resistance has ceased. The ends should not be twisted off. In small arteries the number

of rotations is of no importance, and their ends may be twisted off or not, as may be preferred. In all of the cases mentioned in the above table torsion of the arteries and veins was the method resorted to to control hæmorrhage.

In addition to these cases, of which we have a record, the method of torsion has been the one resorted to in all other surgical operations performed during this period, such as amputations of the female breast, the removal of tumors, the excision of joints, etc. It is within bounds to say that torsion has been resorted to at this hospital in thousands of cases without any mishap. We have had no case of secondary hæmorrhage which could fairly be attributed to the method of controlling the hæmorrhage.

The advantages of torsion as compared with ligation are:

1. The greater facility with which it can be applied.

I am fully aware that this proposition is disputed, but to those who are familiar with both methods, there can be no doubt that torsion is the easier of the two. For the ligation of an artery, an assistant is required to seize the vessel and draw it out while the ligature is applied. For torsion, the surgeon requires no assistant. The vessel must be seized by the forceps in either case. In torsion it only requires three or four turns of the forceps to complete the process, which can be accomplished in as many seconds. When a ligature is applied, let the operator be ever so skilful, the thread may break or slip off the vessel, but if neither of these accidents occur, the process cannot be accomplished in anything like the same time.

2. Torsion is a safer method, being less liable to be followed by secondary hæmorrhage.

This proposition has been absolutely proven by the experience in the use of torsion at Guy's Hospital, London, and I have now given additional proof by the experience given in this paper.

3. Healing is facilitated because the wound is free from any irritating or foreign body.

This proposition is so plain that it should not require an argument. It was true before the antiseptic treatment of wounds had come into such general use, but it is doubly so now. The catgut ligature is no doubt a safer ligature than the silk, for it does not require an ulcerative process for its discharge, and when this ligature has been made thoroughly antiseptic, it is no doubt the best. But a ligature rendered thoroughly antiseptic is not always at hand, and those surgeons who have had most experience with the antiseptic treatment of wounds, will, I think, be the first to admit that, in spite of their most careful attention, septic germs are often introduced into the wounds by means of the ligature. Even after every precaution in preparation and preser-

vation, the handling of a ligature in its application is a frequent source of infection.

But there are other objections to its use. The catgut ligature may dissolve before the artery has become closed by the natural hæmostatic process, or it may unbind. Both of these accidents have been the frequent cause of secondary hæmorrhage.

On a recent visit to some of the principal hospitals in New York City, where the operators and assistants possessed the greatest skill, I was not surprised to see that in many instances a ligature broke, or in other cases slipped off the vessels before they were secured. This was to me exceedingly annoying to witness, when I knew that the vessels could have been so easily twisted while they were in the grasp of the forceps. When the question was asked one of these operators, a distinguished surgeon, "Why don't you resort to torsion?" the reply was, "We are afraid to trust it." This answer might have been given with equal force by Richard Wiseman in the seventeenth century, when asked why he did not resort to the ligature instead of the red-hot iron.

In a matter so important as the arrest of arterial hæmorrhage, it is proper that surgeons should be conservative, but there is such a thing as pushing conservatism too far. In the torsion of arteries, I claim we have an improvement upon ligation; its claims for recognition rest upon physiological arguments, which cannot be shaken, and its reliability as a hæmostatic has been proven by abundant experience.

MEDICAL PROGRESS.

BIOLOGICAL EXAMINATION OF DRINKING-WATER.—MIGULA (*Centralblatt für Bakteriologie und Parasitenkunde*) has come to the conclusion that the number of colonies that are developed in plate cultures, is not an index of the potability of waters examined by this method. He finds, however, that there is a relation in the number of species found in water and its purity. If a large number of varieties are present it speaks generally for the unhealthfulness of the water. We must refer the reader for fuller particulars to the original and the tables which accompany it, representing as they do, over 400 examinations.

He closes with the following conclusions: first, that the number of colonies developed by 1 ccm. furnishes no ground for concluding as to the potability of such waters; second, the bacteria of decomposition are absent from running water; third, the bacteria of decomposition are most numerous in water containing 1,000 to 10,000 germs in each cubic centimeter, though they may be present when the number is as low as fifty, and

they are less frequent when more than 10,000 germs are present; fourth, bacteria of decomposition are only found when several species are present. The relation of number of colonies to number of species is very indefinite.

NEW METHOD OF STAINING RED BLOOD CORPUSCLES.—MIHAJLORITZ (*Centralblatt für Physiologie*) recently called attention to a new method of staining blood corpuscles. He refers to the process of Biondi, in which the blood is mixed with osmic acid and agar-agar and subsequently cut into sections, which may be treated like sections of other tissues. This method is considered by the writer to require too much time, and to be troublesome. He claims to have reached equally good results by staining the blood directly upon a glass slide and subsequently washing in absolute alcohol, clearing with oil of cloves and Canada balsam. The success of the method lies in removing the outer layers so that only a single layer of corpuscles is attached to the glass. This is accomplished by gently passing the finger or a camel's hair pencil over the surface of the clot—the lower layers are left owing to their stronger adhesion to the surface of the glass.

PASSAGE OF TUBERCLE BACILLI THROUGH THE INTESTINAL CANAL.—Some interesting experiments have lately been made by ZAGARI on dogs fed with tubercular food. These are interesting from two points of view. First, that our knowledge of the action of the digestive juices on the tubercle bacillus is small; and secondly, that tubercular processes as affecting the dog have been little studied. Dogs were fed on sputum which had been proved to contain large numbers of tubercle bacilli. After the course of from ten to twenty hours the bacilli were detected by means of the usual color tests in the fæces, and continued to occur for two or three days, occasionally five or six days, after the tuberculous material had been removed from their food. The dogs continued healthy and entirely free from signs of tuberculosis, although the sputum was mixed with their food for some time, and meat known to be tuberculous was also given. Experiments were now made to endeavor to ascertain what substances in the digestive tract prevented the growth of the bacilli. The bacilli found in the fæces were shown by inoculation on other animals to be virulent. It was also demonstrated that washings from the stomach also contained active germs. Although the food was allowed to remain in the stomach for three or four hours before being washed out, yet the organisms were not entirely destroyed. After six hours' stay in the stomach inoculations on guinea-pigs still produced tuberculosis, but their action was delayed. After from seven to nine hours a local infection only was the result, and after from eighteen to

twenty hours no effects at all were noticed. An interesting point in connection with these results is that the gastric juice of a dog contains a higher percentage of acid than in man. As the analysis of the contents of the stomach did not explain why the dogs did not become tubercular, the further course of the bacilli was next investigated. It was shown that the bacilli found their way out of the intestinal canal into the tissues, for the blood of the dogs was proved to be infectious—that is to say, produced tuberculosis when inoculated; the same effect was produced by the lymph from the thoracic duct; also by portions of the liver, when introduced into the peritoneal cavity of a guinea-pig. When portions of the tissues were examined microscopically the result was negative. A few bacilli, however, were found in the spleen. When young dogs were fed with sputum they died, not of tuberculosis, but of a form of "intoxication." Further researches on dogs were then made with pure cultures of tubercle bacilli. When inoculated under the skin a local affection was the result, which usually ran a favorable course. When the injection was made into the pleura a local pleurisy and tubercular disease of the lung were produced which proved fatal. When intravenous injections were tried the results were again negative. The bacilli obtained from the fæces as described above, although virulent, had lost some of their vitality. Pure cultures exposed to a temperature of 55° C. for eight days were not destroyed, whilst the bacilli from the fæces were killed after an exposure of five days. Again, if these bacilli were dried, after from sixty to ninety days they were no longer infectious, whilst Ichill and Fischer have shown that bacilli in pure cultures retain their virulency for a far longer period than this.—*The Lancet*.

A CASE OF TUBERCULAR INOCULATION.—T. DEUKE (*Deut. Med. Wochenschr.*) reports the case of a seven months child of a phthisical mother, that fell and injured its head against a chamber vessel containing some bloody sputum of the mother. The clean cut wound was disinfected and healed rapidly. The cicatrix later began to enlarge, and shortly swelling appeared in the region of the parotid, with suppuration and enlargement of the neighboring glands. This suppuration finally caused the death of the child. In the pus of the part, the tubercle bacillus was found abundantly.

TYPHOID BACILLUS IN DRINKING-WATER.—KARLINSKI (*Archiv. für Hygiene*) has recently made some observations upon the life of the typhoid bacillus, under approximately normal conditions. For the experiments an old cistern with imperfect walls was chosen. The first observations after the addition of 1,900 cubic centimetres of the dejections of a typhoid patient showed an

enormous number of germs containing some twelve different species, including some infusoria. On the third day all of the typhoid bacilli had disappeared. This observation was repeated several times, varying the amount of faeces that were added, but always with a like result. The cistern was then carefully cleaned and filled with pure spring water, in which the writer observed the typhoid bacilli twelve days after they had been added. An explanation for the rapid disappearance of the typhoid bacilli, the writer finds in the speedy development of a large saprophytic germ that destroys them.

THE PHYSIOLOGY AND PATHOLOGY OF SLEEP; WITH OBSERVATIONS ON NONA.—MAUTHNER (*Intern. klin. Rundschau*, 1890, 949), in discussing the various pathological processes whose most prominent symptom is sleep accompanied by extreme muscle-weakness, divides these into those of a more chronic or subacute course, and those of a very stormy acute form. In the first category belong:

1. The "endemic morbid somnolence of the negroes," which is followed by death in the course of two to three months. The symptoms are general apathy and depression, the most extreme muscular weakness without motor paralysis and with intact sensibility, a staggering gait, and constantly increasing somnolence until the power of motion is entirely lost, and the motionless sleep lasts until the fatal end.

2. "Gayet's disease," as illustrated in the case described by Gayet in 1875, the symptoms, course and termination of which possess a close resemblance to the "maladie du sommeil," and which is of especial importance in that an autopsy was obtained.

3. "Gerlier's disease," occurring in the form of small epidemics in Switzerland, and described by Gerlier under the name of "*vertige paralysant*." The symptom of somnolence is less prominent in this affection than are the vertigo and extreme muscular weakness, rendering young, powerful stable-men unfit for any labor.

4. The "*attaque du sommeil*" of hysterical persons, the duration of which may be several months without ending fatally.

All of these more chronic forms—with the exception of the tropical form, of which the author has no certain knowledge in this respect—have a striking focal symptom in common; viz., ptosis with paralysis of the ocular muscles.

The acute forms are represented by the following:

1. "Wernicke's disease," whose symptoms are, from the beginning, a combination of ocular paralysis, staggering gait, and somnolence, or else a final stage of somnolence, after preceding agitation.

2. Unusually long sleep after intoxication, in

which the individual may sleep—as in one case under the author's observation—as long as five days, during which time it is impossible to wake him.

3. "Nona," in case this disease actually exists. The possibility of the existence of this affection cannot be denied, since morbus Wernicke, occurring epidemically or endemically, would end in death the third or fourth week, with somnolence as its most prominent symptom.

The nature of both the chronic and the acute forms of morbid somnolence is undoubtedly that of a *poliencephalitis superior*. The inflammation of the central gray cavities of the third ventricle, the gray matter of the walls of the aqueduct of Sylvius, and that of the floor of the fourth ventricle, give as the most constant general symptoms, general apathy and depression, with excessive muscular weakness, and, in a more advanced stage of the disease, extreme somnolence; while as a result of the extension of the process to the nuclei of the nerves, the focal symptom of ocular paralysis appears.

Basing his opinion on clinical experience and on the pathological appearance in disease of the central gray cavities, the author proposes a theory for the cause of physiological sleep. This theory is, that sleep is to be considered as an evidence of tiring of the central gray cavities. Through the temporary suspension of the function of this portion of the brain, both the centripetal and the centrifugal nervous paths communicating with the cortex are cut off. Consequently sensory impressions are not conducted to consciousness, although the sensory organs on the one hand, and the cells of the cerebral cortex on the other, have not suspended their function. In the same way the motor centres are normally innervated in dreams, but on account of the interruption in the conduction in the central gray cavities, no motion is produced in spite of the normal power of conduction of the peripheral nerves. Finally the focal symptom of ocular paralysis is not absent; for the falling of the eyelids in those becoming sleepy is a true ptosis, while the simultaneous occurrence of double vision indicates the marked disturbance of innervation of the external ocular muscles.—*American Journal Medical Sciences*.

HERPETIC ANGINA.—Under this title BERTILO (*St. Petersburger Med. Wochenschr.*) describes an interesting case of a man who presented himself at the city hospital at Riga. At first he was treated for an ulcer at the base of the tongue, which caused severe pain. As he was markedly emaciated and presented tubercle bacilli in the sputum the ulcer was thought to be tubercular, notwithstanding that the patient had had syphilis some years before. While under treatment a crop of irregularly placed vesicles, with cloudy contents,

presented themselves on the posterior wall of the pharynx. Later these vesicles disappeared leaving an ulcer which was slow to heal. Subsequent crops of vesicles appeared upon the base of the tongue, fauces and walls of the pharynx, these were accompanied by vesicles at the margin of the lips and in one case on the glans penis. The patient finally recovered and was discharged about one month after the beginning of the trouble. The author makes this case a text for a discussion of some of the theories regarding the identity of herpes of the skin and throat.

PERSISTENCE OF THE TYPHOID BACILLUS IN THE BODY.—CHAUTEMESSE (*Semaine Médicale*) reports a case of typhoid fever with so many relapses that the duration may be said to have extended over five months. Orloff has published a case in which a pure culture of the typhoid bacillus was obtained from an osteo-myelitic abscess, nine months after the beginning of the affection. Achalmé has reported a similar case. The writer observes that these cases are rare, but that they teach the possibility of prolonged infection in typhoid. He calls attention to the fact that abscess in this disease is usually caused by the various forms of suppurative bacteria (secondary mixed infection, ref.).

In the discussion Rendu reported a case with three relapses and a duration of three months. Netter, one with a duration of six months and six relapses. In this last case an abscess developed that contained only suppurative bacteria.

AN IMPROVED METHOD OF LAVAGE.—A very simple improvement in the apparatus for washing out the stomach, a procedure often of great value in the treatment of gastric disorders in childhood, has been described by DR. W. BEATTIE NESBITT in the *Archives of Pediatrics*, September, 1890. The fluid is obtained as usual from a siphon bottle placed above the level of the child, but the india-rubber tube from this bottle is connected with the stomach catheter, not by a piece of straight glass tubing, but by a glass tube shaped like a widely open tuning fork; the handle of the tuning fork is connected with the stomach catheter, one limb with the tube from the bottle, and the other with a waste tube conducted into a suitable receptacle. It is convenient to have the tube from the bottle and the catheter of red rubber, and the waste tube of black rubber. The tubes from the two limbs are placed over the forefinger of the right hand, and are held loosely in the palm; either can then be easily compressed by the thumb. When it is desired to fill the stomach, the catheter having been introduced, the waste tube is compressed, and the fluid readily flows into the stomach from the bottle; when the stomach is to be emptied the red or siphon tube is compressed, and the black re-

leased. If the eye of the catheter becomes blocked, as often occurs, the current is easily reversed by compressing the black and releasing the red tube. Dr. Nesbitt recommends the use of a mouth gag, and, after inserting the tube, places the child on its side, with the face slightly downward. Before removing the catheter the stomach is filled quite full. An act of vomiting generally follows the withdrawal of the tube, or if not may be excited by titillating the fauces. "In this way," writes Dr. Nesbitt, "I have often seen removed large pieces of coagulated putrid casein, half an inch to an inch in length, of such a tough leathery consistence that no amount of washing would have broken them up."—*British Medical Journal*.

CASTRATION IN OSTEO-MALACIO.—E. TRUZZI reported to the International Congress (*Beilage zum Centralblatt für Gynäkologie*) two cases in which the operation was done, followed by recovery. The first case was that of a woman 26 years old who during her first pregnancy, had ostitic pains, but the confinement was spontaneous. The next labor was more difficult and a third was induced before term. After this last both ovaries were removed, which was followed by marked improvement of the osteo-malacio. A second case was that of a woman 34 years of age with osteo-malacio of three years standing, the result in this case was a suspension of the pathological process. From these two cases the author argues that the operation in some way affects the general nutrition favorably, in puerperal as well as non-puerperal cases.

Fehling, of Basel (*ibidem*) contributed a paper in which he reported a prompt recovery in eight cases of osteo-malacio in which the uterus and ovaries had been removed after Porro's method. He thought the relation of the operation to the bone disease was shown by the fact that at menstruation the trouble was always worse; the immediate lessening of pain after operation, and the evident marked effect of pregnancy upon the process. Nasse has demonstrated a loss of substance in the bones of the pelvis and it was possible that we might have in these cases, a vaso-motor reflex from the genital organs.

TREATMENT OF IN-GROWING TOE-NAIL.—PURCKHAUER (*Münch Med. Wochenschr.*) recommends the following method which he has tried not only on himself but numerous patients. The offending portion of the nail is painted with 40 per cent. solution of hydrate of potassium, which rapidly softens the outer layers, soon reducing them to the consistence of butter, after which they are scraped away. The proceeding is again repeated until the nail is reduced to the thickness of paper, when it may be removed from its bed and cut away with scissors.

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SATURDAY, NOVEMBER 8, 1890.

THE MEDICAL STUDY OF CRIMINALS.

The medical reports of physicians connected with jails, prisons, asylums and alms houses, are generally confined to a few statistics and dispensary-like reports, that have little intrinsic value to science. To-day the prison physician finds a new continent suddenly opening before him, of the medical study of crime and the criminal. His services as dispensary physician are insignificant compared with the possible facts and discoveries within his grasp.

The publication of the second volume of LOMBROSO'S great work on criminals, and the papers and discussions of the Second International Congress of Criminal Anthropology at Paris last year, has suddenly given the prison physician prominence. To-day he occupies the most enviable position for original work, in solving some of the great questions of mental science and sociology. Criminality has a distinct symptomology and pathology; crime has a biological factor, and the criminal has an anatomical, physiological, and psychological nature. The legal treatment of this class has failed, and as a consequence, the level of criminality is rising throughout the civilized world. In France, England, Germany, Spain and the United States, the tide of criminality is rising rapidly. In this country the number of criminals in twenty years have increased one-third more than the increase of the population.

It is evident that the treatment of criminals must be from a different standpoint; that crime

must be studied scientifically, and the criminal known physiologically and anthropologically. This Lombroso's works attempts, and a little volumn on "The Criminal," published in the *Contemporary Science Series*, gives a very excellent summary.

In this work criminal symptomology is described. In the study of the external physical symptoms distinct cranial and cerebral characteristics are seen. While the average size of the heads differed but little from ordinary people, there was lack of symmetry, and defective development. In the face, a large prominent lower maxillary bone, or a thin retreating jaw was noted in most cases. High cheek bones, large coarse ears, pallid skin, precocious wrinkles that are common to old age; anomalies of the hair; and a physiognomy that is difficult to describe, in which the eye is most prominent, were also noted. In large numbers of criminals there is very striking similarity of appearance. In heredity some remarkable facts appear. In all cases there is an innate predisposition, and an element of contagion from the surroundings. Motor activity in all cases was prominent, and physical insensibility was below the normal in most cases, hence punishment by pain has less influence on the criminal. The eye and its functions were found superior to the average man, while the hearing and sense of smell were below the average. Early use of tobacco, great sensitiveness to climatic changes, vaso-motor insensibility appeared common. Moral insensibility and palsy of all the higher brain forces, suggesting an arrested development, and reversion of type, with moral instability, and want of foresight, seemed present in all cases. This is ascribed to physical insensibility and defects of normal functioning. In intelligence the average criminal is stupid, inexact, lacking in forethought, and strangely imprudent; he is also cunning, hypocritical, loving falsehood and intrigue. Vanity is also very prominent, and emotional instability, and sentiment, and even tenderness and religious emotion are associated with instructive criminality. A literature, language, and philosophy have grown up with this class. The author goes back to the beginning of crime and the conditions which favored its growth, such as environment, nutrition, culture, contagion and other causes. He discovers crime

among children, and women, crime as a profession and its relation to epilepsy, and insanity, and reaches some very suggestive conclusions.

Criminals, like the insane, the idiot, and epileptic, are the results of natural causes and reversionary types, the roots of which go further back than any acquired disease. Like insanity criminality follows civilization, and cannot evidently be reached by any one plan of treatment. The experiment at Elmira, New York, of the training of youthful criminals, opened up a new vein, and suggests possibilities of medical treatment that is startling. It also suggests that prison physicians and others who come in contact with criminals, may from a scientific study, be able to point out the forces and laws which govern crime and the criminal, and adopt measures of treatment that will neutralize this rising tide of crime which threatens the civilization of to-day. One fact is established beyond question, viz.: our present theories of crime and criminals must be abandoned. The advances of scientific knowledge in the realm of physiology and psychology, sociology, and anthropology, contradict and give no support to the present views.

A few great pioneer students, like Lombroso, and other distinguished physicians of Europe, have gone into this new land of science, and we ask, where are the American physicians with equal facilities and equal enthusiasm? Here is an open field, beyond all rivalry, with the possibility of discoveries that will help on the march of the race, with more certainty than the knowledge of the *poles*.

THE RELATION OF SYPHILIS TO PARETIC DEMENTIA.

This subject was recently discussed in the Congress for Mental Diseases, held in Rouen in August last.¹

DELAPORTE opened the discussion by stating the diverse views held upon this subject, and the necessity of having a special table of causes, for all cases of general paralysis. Also, a second table of the number of syphilitics found among those affected with other forms of insanity.

DUBUISSON, of Quatremare, had noticed a large increase in the number of paralytics, which he

attributed to the increased consumption of alcohol. Out of 1,600 paretics, in only fifty could syphilis be determined. He ranged the causes of paretic dementia, according to their frequency, in the following order: alcoholism, heredity, overwork, syphilis, and traumatism.

REGNIER, of Paris, claimed to have demonstrated that there were two distinct diseases, one known as pseudo-paralysis (FOURNIER) and the other as true dementia, dependent upon causes competent to produce other forms of mental disease. The frequency of syphilis in the antecedents of general paralytics is very variable, according to MENDEL 76 per cent. REGIS, in 318 cases, found a like percentage. On the other hand, CHRISTIAN places the number at only 15 per cent.

RÉGIS, of Bordeaux, said that during the past year he had seen twenty-one paralytics, eighteen of whom were syphilitic, one doubtful, and two non-syphilitic. He especially called attention to the fact that manifestations of syphilis were rare among paralytics, and that many of them might marry and beget healthy children. It was the marks of old disorders that were to be looked for.

CULLERRE, of Roche sur Yon, placed the percentage of syphilitics at 13. He did not think that general paralysis of syphilitic origin had distinct clinical characters, but it was most refractory to specific treatment.

VOISIN, of Paris, said certain restrictions should be placed upon the figures of Régis and Cullerre. They assumed too readily the intervention of syphilis. Out of 560 general paralytics he had found but nine presenting undoubted signs of tertiary syphilis. The symptoms of cerebral tertiary syphilis had distinct characteristics and could be distinguished from the ordinary forms of paralytic dementia.

RIST, of Versailles, said it was impossible to reconcile the statistics of Régis and Voisin. The one had found eighteen syphilitics in twenty-one cases of general paralysis, and the other but nine in 540. This was only to be explained by a very different manner of diagnosing syphilis.

The discussion, with an unimportant addition, was closed at this point, leaving the question of the etiological relation of syphilis in general paralysis, in the position that it has been for many years; and showing the necessity of more accurate clinical study of the subject.

¹ La Semaine Médicale.

SOURCES OF CAFFEINE.

It is said that nearly all the caffeine now made is obtained from tea. For years past it has been asserted, and commonly accepted as the fact, that this alkaloid was identical with that derived from either coffee, cocoa, Paraguay tea, guarana or kola. Latterly, however, this opinion has been unsettled, since the separate study of the alkaloids, derived from these different sources, has shown that a marked difference in the therapeutic effects of some of them can be demonstrated. The production of palpitations of the heart, a peculiarity of theine, may be accounted for in that class of cases that have greatly puzzled some recent observers, when the fact becomes known to them that the tea plant has been substituted for the coffee-berry, as a source of their caffeine. A recent paper by DR. T. CRANSTOWN CHARLES, in the *British Medical Journal*, contains an interesting study of the physiological effects of maté, or Paraguay, tea and its alkaloid, which is also called caffeine, but which seems to be antidotal to the symptoms produced by chronic overdosage with theine. He reports two cases, elderly women, who having been great tea-drinkers, had become troubled with sleeplessness, constipation and headache, and whose condition had been continuously changing for the worse, in recent months; he prescribed the maté tea. After taking it for a week, these patients reported marked improvement; the constipated habit had been broken up, and their bowels had become regular without resort to cathartic drugs, in consequence, as is held by Dr. Charles, of the property possessed by maté, of exciting the peristaltic action of the intestines; and more urine was excreted, while the insomnia and headaches were far less frequent. These good effects still continue, after a nearly continuous exhibition of the maté for more than a year. Dr. Charles adds that seven other persons have found maté serviceable for the relief of headache and constipation, and with whom both tea and coffee had seemed to disagree.

EDITORIAL NOTES.

THE AMERICAN ACADEMY OF MEDICINE will hold its Annual Meeting at Philadelphia, Wednesday and Thursday, December 3 and 4, 1890. Richard J. Dunglison, Secretary.

CINCINNATI AUTHORITIES AND CIGARETTE SMOKING.—The chief of police in that city has issued orders to arrest all children found smoking and will hold them in custody until they learn from whom the goods were obtained.

A PHYSICIAN CREMATED.—The body of Dr. A. B. Carpenter, a prominent physician of Cleveland, O., was incinerated at the Buffalo Crematory, October 21.

A NEW MEDICAL JOURNAL.—The *Baltimore Medical and Surgical Record* is the title of a new medical monthly, the first number of which was issued in October. Its purpose is to furnish, at a low price, a monthly review of medical literature, and as the second medical journal in the State of Maryland, will seek especially to serve the profession in that State. The initial number gives promise of a periodical highly creditable to the Editor and valuable to the profession.

KEMMLER'S DEATH INSTANTANEOUS.—Under this heading, the *Chicago Tribune* of October 26 gives a somewhat extended statement from which we quote the following facts: When William Kemmler was executed by electricity in the State's Prison at Auburn, N. Y., last July, Dr. George E. Fell, of Buffalo, one of the attending physicians in charge, took occasion to obtain and preserve some specimens of the executed man's blood for microscopical examination and analysis. The blood, the most important fluid of the body, is, as is well known, affected by any important changes in the system, and the execution afforded an opportunity never before obtainable of ascertaining the effects of a fatal electric shock. These specimens were given to Henry L. Tolman, a well known microscopist of Chicago, to be photographed. The slides thus mounted and photographed are specially interesting—revealing the fact that with blood corpuscles taken from points along the track affected by the electrical current are shrunk to one-third of their normal diameters, have adherent tendencies, and in multitudes of instances are literally shattered. The blood taken after death from the lower extremities was perfectly natural in appearance, indicating that, rapid as is the circulation of the blood, electricity is still more instant in its execution.

THE CONNECTICUT MEDICAL SOCIETY is making preparations to observe its centennial anniversary.

sary in 1892. Dr. Gordon W. Russell, of Hartford, has been invited to prepare a medical history of the Colony and State previous to 1792, and Dr. Francis Bacon, of New Haven, is to write the history subsequent to that date.

THE INSANE HOSPITAL AT BLOCKLY.—The sum of \$150,000 had been appropriated for new buildings in connection with this institution. The Committee on Charities of Philadelphia now recommend an additional appropriation of \$75,000 for their completion.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The eighteenth annual meeting of this Association will be held at Charleston, S. C., December 16, 17, 18 and 19, 1890. The President is Dr. Henry B. Baker, of Michigan; Dr. Joseph H. Raymond, of Brooklyn, N. Y., is Secretary; Dr. H. B. Hoelbeck is Chairman of the Committee of Arrangements. The subjects selected for consideration at that meeting will be as follows: "House Architecture;" "Heating, Lighting, Drainage and Ventilation;" "Sewage Disposal;" "Marine Sanitation;" "Control of Tuberculosis;" "Isolation Hospitals;" "Establishments in favorable Climates for persons predisposed to Tuberculosis;" "Schools for Children;" "Sanatoria;" "Permanent Residences," etc.

THE NEW TARIFF AND MEDICAL BOOKS.—Under the new tariff law foreign medical books printed in any other language than English are admitted without the payment of duty.

THE NEW YORK STATE MEDICAL ASSOCIATION held its annual meeting in Mott Memorial Hall, in New York, October 22, 23 and 24, and was in every way a success. The President's Address is presented to our readers in the present number of *THE JOURNAL*, and an outline report of its work will also be found under the head of "Society Proceedings."

SMOOTH SAILING.—The *Medical Record* is led to infer from a hypochondriacal statement made by the *North American Practitioner*, that "the World's Fair matters are not moving altogether smoothly in Chicago." We beg to inform the *Record* and its numerous readers that nothing could be more a matter of fancy and less a matter of fact. It was certainly the dictate of wisdom, on the part of the management, that every precaution should be taken, and that every ques-

tion of sanitation in connection with the Columbian Exposition should be most carefully considered. Good counsellors were selected and their advice accepted. The site is selected, the work is in progress, all matters are moving on smoothly and the management, in the confidence of a grand success, is happy.

TRI-STATE MEDICAL ASSOCIATION.—At the annual meeting of the Tri-State Medical Association the following were elected as officers for 1891: President, Dr. Robert Battey, Rome, Ga.; First Vice-President, Dr. E. T. Camp, Gadsden, Ala.; Second Vice-President, Dr. Richard Douglas, Nashville, Tenn.; Third Vice-President, Dr. D. H. Howell, Atlanta, Ga.; Secretary, Dr. Frank Trester Smith, Chattanooga, Tenn.; Treasurer, Dr. B. S. Wert, Chattanooga, Tenn. On motion the Association adjourned to meet in Chattanooga, Tenn. (date to be decided on), 1891.

PUBLIC MEDICAL LIBRARY IN KALAMAZOO, MICH.—Dr. E. H. Van Deusen, formerly Superintendent of the Michigan Asylum for the Insane at Kalamazoo, but at present retired from active practice, has recently donated to the city of Kalamazoo the sum of \$50,000 for the purpose of the erection of a public library building.

DR. W. S. CHRISTOPHER, of Cincinnati, has been called to fill the Chair of Practice of Medicine, and Clinical Medicine, of the University of Michigan, Ann Arbor.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its next Annual Meeting at Atlanta, Ga., November 11, 12, and 13, 1890. A general invitation has been extended to members of the medical profession to be present at its sessions, and a very general response is anticipated. George J. Engelmann, M.D., of St. Louis, Mo., is President; W. E. B. Davis, M.D., of Birmingham, Ala., is Secretary, and Virgil O. Hardon, M.D., of Atlanta, Ga., is Chairman of the Committee of Arrangements. A full programme has been prepared, and we anticipate a most successful meeting.

COST OF INFLUENZA.—The cost to England of the influenza epidemic is estimated at \$10,000,000; about one-half of this amount having been paid by insurance companies and friendly societies, and the remainder representing loss of wages and disorganization of business.

TOPICS OF THE WEEK.

A SUCCESSFUL EFFORT.

The effort to secure \$100,000 for the purpose of inducing the Trustees of Johns Hopkins University to admit women to their future medical school, which was inaugurated six months ago, has been successful. The fund was formally tendered by Mrs. Henry Winter Davis, representing the subscribers, and accepted by the Trustees October 28. Much interest has been manifested throughout the country in the movement, and committees have been at work in the chief large cities in collecting contributions towards the fund. The matter has been pushed under the impression that if the fund were offered before the opening of the school it would be secured, whereas there might be difficulty later on. In consummating the agreement the Trustees, at the request of the ladies, passed a resolution accepting the fund and the conditions, viz.: that women whose previous training has been equivalent to the preliminary medical course prescribed for men shall be admitted upon the same terms as the latter. The fund is to be invested and known as the Woman's Medical School Fund, and with interest and additions, is to remain invested until, with its aid as a foundation, a general fund has been accumulated of not less than \$500,000, "sufficient for the establishment and maintenance of a medical school worthy of the reputation of this University and fully sufficient as a means of complete medical instruction. Then, and not until then, will a medical school be opened, etc." The Board further declare that they are "satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life when women are to be attended, there is a need and place for learned and capable women physicians, and that it is the business and duty of the Board, when it is supplied with the necessary means, to make provision in its proposed medical school for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness." Judging by the success in raising funds to tide the University over the financial embarrassments of 1888 and 1889, it is quite probable that this bid for general support in favor of one of the most popular movements of the day, by one of the most renowned and progressive of our American Universities, will meet with an early and liberal response..

THE MEDICAL LIFE, ITS OPPORTUNITIES AND DUTIES.

In his Presidential Address delivered before the University of Durham Medical Society, on October 10, and reported in the London *Lancet* of October 18, Prof. Thomas Oliver spoke upon this subject :

In the course of his address he referred to various reasons why the medical life should be devoted to study, and dealt with the aims which should guide the exercise of the study. The aim of each should be how best to discharge the duties of the profession so that life may be spared to others and happiness extended. Such an aim

brings with it a larger heartedness and a truer nobility of character in the end. Speaking of the opportunities afforded to students at the present, he said : "It is our good fortune to enter upon life in the latter part of a century marked by great activity. We are heirs of the knowledge accumulated by our predecessors. The experimental method in medicine has widened our margin of observation. Nearly a century ago, Galvani, the Professor of Anatomy in the University of Bologna, discovered the phenomena of galvanism. His discovery proved eminently suggestive. To his contemporary, Volta, Professor of Physic in the University of Pavia, Galvani's experiments appealed with marvellous power. Volta set himself at once to investigate the sources of the electricity displayed in Galvani's experiments, approaching the subject from the physical rather than the physiological side, and succeeded in giving to science an apparatus by which current electricity is transmitted in a continuous direction, and he has thus supplied us with the means of increasing our knowledge of the nervo-muscular system. Twenty years after this Sir Charles Bell discovered the difference in function between the anterior and posterior roots of the spinal nerves. Magendie, Muller, Claud-Bernard, and Waller contributed their quota to what we know of the functions of the nervous system. It was a beautiful but a bold stroke, too, that of Helmholtz, which led him to determine the rapidity with which nervous action is transmitted through motor nerves. Armed with that increase of knowledge which bids for acts of greater daring, the brain itself has been attacked by physiologists and surgeons, during life, to ascertain the secrets hidden in its convolutions. And, if a larger comprehension of the nervous system has enabled us to solve many problems that had hitherto been regarded as obscure, in other departments the same advance is noteworthy. The discovery of the vaso-motor centres, and the high-class character of the work of Gaskell as regards the anatomy of the sympathetic system, deserve notice ere we pass to another branch in which considerable progress has been made. It would appear that we are on the eve of some great therapeutical discovery ; for Koch has announced that he has discovered a cure for tubercle depending upon destruction of the bacillus. I can scarcely leave the subject of micro-organisms without alluding to the brilliant discoveries of Klein within the last few months. Klein, however, has shown that on the udders and teats of the cow were occasionally found sores, the discharge from which, finding its way into the milk, was probably the source of infection. His experiments have brought to light an interesting series of facts. We have seen that in the human subject diphtheria is mostly a local disease, and that in the cat it is also local, but with a special tendency for lung and kidney to become affected. When the same disease is induced in the cow it would seem as if the germs were diffused throughout the body, for they appear in the milk which is secreted, and here is a circumstance which strongly supports that statement. Two of the cats kept by Dr. Klein took diphtheria, the origin of which at first could not be traced ; there was no history of any recent epidemic amongst the cats, and their iso-

lation prevented them being infected in the ordinary way. In the same institution were two cows ill with diphtheria, induced by inoculation. Dr. Klein had arranged that their milk was to be thrown away. One of the attendants, disregarding this order, fed the two cats with the affected milk, with the result of causing diphtheria in them; thus was transmitted a truly specific disease from one animal to another, in exactly the same way as it is transmitted from animal to man. Should men despise a position in life, be it what it may, which gives them the opportunities of acting, which obliges them to suffer, and yet gives them the chances of conquering? The child-like spirit of humility is ours that we may at first accept conditions placed upon us over which we have no control; and the spirit of unrest and mental dissatisfaction are ours that, finding ourselves in these circumstances, they become our field of battle, wherein we learn to labor and prevail. To this are your education and manhood tending. Lifted out of circumstances in life as you have been, it is only that you may find that increased knowledge and opportunity have vastly enhanced your responsibility." Dr. Oliver concluded with the following words: "There are two worlds for you to conquer—one, the world of physical suffering, the other of mental sorrow. Patient and resigned in one that you may transcend the mists and clouds oft created by the other, you will, in a calm and clearer atmosphere, not only find answers to some of the great problems of human life, but, with a soul disciplined by experience, aid others to solve the problem for themselves."

THE OLDEST FRENCH BOOK ON SURGERY.

Dr. Pagel of Berlin has found the oldest French work on surgery among the manuscripts of the Royal Library here, and is publishing it in the *Archiv für Klinische Chirurgie*. It was written in the beginning of the fourteenth century, and its author was Henri de Mondeville. He deals in great detail with all the measures necessary for the treatment of surgical cases, and gives exact instructions for the male and female attendants. Many of these instructions afford significant glimpses of domestic life nearly six centuries ago, not only in the palaces of princes, but also in the hovels of the working people and bondsmen. The author frequently intercalates rules for the guidance of the surgeon in his dealings with patients and their relatives. He instructs his professional brethren, for instance, how to wring their fees—"salariam extorquere"—from wealthy but ungrateful patients. Passages of this kind give a vivid idea of the social position of physicians and surgeons in that remote period; they also increase our knowledge of the superstitions of that time. Besides this, the work gives a pretty complete idea of the state of surgery in the fourteenth century. Its author was one of the most eminent surgeons of his time. After studying in Paris and Montpellier, especially under Jean Pitard, he became a professor of medicine and surgery. In 1301 he was appointed physician in ordinary to Philip IV of France, surnamed the Handsome, whom he accompanied to Flanders. He began the book in 1306, but his progress was slow, owing to the multiplicity of his professional engagements. A long de-

lay was caused by the circumstance that he accompanied Philip's brother, Charles de Valois, as army surgeon, to Arras and England. Thus it happened that the book was still unfinished at the time the author died of lung disease, about the year 1318. Besides the Berlin manuscript, Dr. Pagel has used for his edition (the first ever published) three manuscripts belonging to the French National Library, which were lent to the Berlin Library by Leopold Delisle, the head librarian there, for this purpose.—*The Lancet*.

BACILLARY PARTNERSHIPS.

In the course of some experimental investigations on the relationship of microorganisms with diseased conditions, Drs. Cornil and Babé have discovered that a certain affinity exists between particular species. In other words, the development of special varieties may be facilitated, or the reverse, by the presence or preëxistence of certain other varieties. In this way the occasional complication of an existing infectious disease by a second is not the result of mere chance, but is governed by some still undefined conditions of environment. In other instances this association of two or more species of microorganisms is necessary to the evolution of the malady. This association is the rule in the infectious diseases of human beings, and it is often the secondary infection that determines the fatal issue. This partnership arrangement may take place between microbes belonging to more or less nearly related species, as in the case with the organisms of pneumonia and typhoid fever. Or there may be streptococci and bacilli together, as in diphtheria, or several varieties of streptococci, as in the infection of wounds. In fact, there is a large selection of these associations, some invariable, others frequent and a third category, in which the secondary infection is accidental. These facts may possibly throw some light on the rhythm and sequence of the symptoms in the infectious diseases.—*Med. Press.—Times and Register*.

THE INTERNATIONAL MEDICAL CONGRESS AT ROME IN 1893.

Dr. Guido Baccelli, President of the Accademia Medica of Rome, and Professor of Clinical Medicine at the Sapienza, took the chair at a recent meeting of the Società per il Bene Economico di Roma, to consider the means of ensuring the success of the International Medical Congress to be held three years hence in the Eternal City. Among the adjuncts to that Congress it was decided to form an International Exposition of Hygiene in connection with the Sanitary Department of the programme, and, with that object, to appeal to all the leading industrial and professional centres throughout the peninsula to contribute their best and latest additions to the "Armamentarium Hygienicum," so as to place Italy at as great an advantage as possible in the inevitable contrast between her own sanitary work and that of the other Powers represented on the occasion. Florence, which has hitherto led the van in hygienic progress in Italy, has already promised her energetic coöperation; and other cities, like Turin and Milan, are expected to do likewise. Concurrently with the Medical Congress, an International Exposition of the Industries of All Nations is also being organized, so that Rome will be the busy scene of quite a gathering of the peoples, on a scale she has not yet known since she ceased to be mistress of the world. The early summer months, May or the beginning of June, or the early autumn months, the latter half of September or the beginning of October, are likely to be those selected for the Medical Congress—all risk of malaria at either time being improbable.—*Lancet*.

PRACTICAL NOTES.

THEOBROMINE AND DIURETIN.

It will be remembered that early in the year Dr. Christian Gram, of Copenhagen, published some results of his experience of theobromine as a diuretic, and his conclusions that in diuretin, the sodio-theobromine salicylate, a salt had been obtained which was easily absorbed and strongly diuretic. Under the direction of Dr. Dujardin-Beaumetz, further observations have been made by Mme. K. Pomerantz, which, in the main, confirm the statements originally made by Gram. The results she has obtained are briefly as follows: 1. When given in doses of 15 grs. every two or three hours diuretin is a much stronger diuretic than caffeine; 2, when there is considerable cardiac degeneration it should be employed with some caution, especially when there is albuminuria; 3, under the influence of diuretin the force of the cardiac contractions is scarcely affected; 4, diuretin rapidly increases the quantity of urine passed, and the diuretic effect lasts twice or three times as long as that produced by caffeine; 5, the activity does not wear off readily as the patient becomes accustomed to the drug; 6, micturition is not rendered difficult or painful; and 7, diuretin has no action on the central nervous system. Both theobromine and diuretin give good results in cases of dropsy when diuresis is possible; but as the action appears to consist of direct stimulation of the renal epithelium, it is obvious that the activity of the drug is seriously interfered with in cases of advanced kidney disease.—*The Lancet*.

SALICYLIC ACID AND CREASOTE SOAP.

Salicylic acid, 5 parts.
Creasote, 2 parts.
Basic soap, 93 parts.

M. This soap has been found of great service in the treatment of lupus, psoriasis, seborrhœic eczema, parasitic syphilis, favus and tinea tonsurans.

—*Nouveaux Remèdes; Nat. Druggist*.

ALTERATIVE FOR TERTIARY SYPHILIS.

R. Potasii iodid, ʒijss.
Syr. acidi hydriodic, ʒj.
Aque destillat, ʒij.

M. S. ʒij thrice daily, in a wineglassful of rice water (to detect free iodine).

—*Gerhard*.

PHENACETIN IN TYPHOID FEVER.

According to *The Lancet*, "Dr. Sommer has used phenacetin with great success in the treatment of typhoid fever, thus confirming the favorable views of its action which have been expressed by Masius and others. The dose employed for adults was 4 grs., which was repeated from

two to four times during the twenty-four hours. Children were given only half this dose. No less than sixty cases were treated in this way, with but one fatal case, about which it is noted that the patient was not subjected to phenacetin treatment until three weeks from the commencement of the attack. In no case were there any serious complications."

FOR ENLARGED PROSTATE WITH CYSTITIS.

R. Ergotinæ.
Pil. hydrargyri pulv., āā ʒj.
Salolis, ʒij.

M. et divide in partes æquales No. xx et in capsulas gelatinas dantur.

S. Take one capsule thrice a day.

—*Gerhard*.

FOR UTERINE HÆMORRHAGE.

R. Ext. cannabis Indicæ, gr. viij.
Ext. ergotæ fl., ʒj.
Ext. hamamelis fl., ʒss.
Tinct. cinnamoni, ʒss.

M. S. ʒj every three hours.

—*Montgomery*.

TREATMENT OF SYPHILIS BY RECTAL INJECTIONS OF IODIDES.

According to the *Revue Générale de Clinique et de Thérapeutique*, the following formula may be used by the anus, whenever the stomach is disordered:

R. Iodide of potassium, 15 grs.
Ext. of belladonna, ¼ gr.
Water, 4 ozs. ℥.

The solution must be warm, and is said to be well borne and effective.

TREATMENT OF SMALL-POX.

M. Galewouski, of Paris, reports that in the small-pox hospital at Brunn, in Austria, baths colored red with permanganate of potash are used for the treatment of small-pox. It is stated that after a short stay in the bath the temperature of the patient falls materially, his general health is improved, the pustules are resolved, and recovery sets in.—*Med. Press and Circular*.

CHLOROFORM WATER IN CROUP.

Dr. H. B. Bashere, in the *Medical Record*, states that in the treatment of false croup he has had excellent results from the use of chloroform water, which, in his judgment, is superior to chloral. From 5 to 10 minims of chloroform to an ounce of water and about ½ drachm of glycerine, of which mixture a teaspoonful is given every half hour during the attack and the following day less frequently, say every two hours, but during the evening every hour, according to the difficulty of breathing.

SOCIETY PROCEEDINGS.

Tri-State Medical Association.

Second Annual Meeting, held in Chattanooga, Tennessee, October 14, 15, and 16, 1890.

FIRST DAY—MORNING SESSION.

The Association met in Turner Hall, and was called to order by the President, Dr. J. B. Cowan, of Tullahoma, Tennessee, at 10 A.M. The first session was devoted to introductions, miscellaneous business, etc.

AFTERNOON SESSION.

DR. W. P. McDONALD, of Hill City, Tennessee, contributed a paper entitled

REPORT OF A CASE OF CANCRUM ORIS OR GANGRENOUS STOMATITIS.

The patient, white, was 4 years of age. Dr. McDonald first saw the case on August 5. He found her with some fever, tongue coated brown, with red edges, surface more or less furrowed or full of cracks in the brown coat, her general appearance indicating a very low state of health. Her bowels were inclined to be too loose, and her abdomen seemed to be somewhat distended—tympanitic. With these symptoms he pronounced the case one of typho-malarial fever. He began treatment by giving a mercurial purge, followed by large doses of quinine and bismuth. This treatment was continued for two days, after which he ordered 10 drops of the syrup of iodide of iron after meals, also quinine and bismuth in small doses three or four times a day. This treatment was continued for about ten days, at the end of which time he found the patient had greatly improved.

Fourteen days after seeing the child for the first time, he was called to see the mother, whom he found with nearly the same symptoms as the child first presented. During his absence from the city, another physician had treated an older daughter, whom he supposed had been troubled with the same disease. The child was still improving except complaining of a sore throat. On examination he found several small ulcers on the right side of the mouth, with a general inflammatory appearance of the gums and whole mucous lining of that side of the buccal cavity, with some bleeding from around the teeth. The trouble at first seemed to yield to a wash of chlorate of potassium and creosote, but on the seventeenth day of illness, the inflammation increased rapidly, the whole cheek and side of the face appearing very much swollen, and the inside was fast becoming dark and gangrenous. August 24, a small dark spot about the size of a penny made its appearance externally, just at the right wing of the nose. This rapidly enlarged, in-

volving the wing of the nose and in proportion the tissues on either side of the central spot, and on August 25, it had involved the right side of the nose up to the inner canthus of the eye, also the upper lip to the median line, and had spread rapidly on the cheek, reaching a point where the zygomatic muscles cross the superficial portion of the masseter. The teeth on this side became loose and dropped out, both above and below, indicating deep-seated trouble, possibly involving the maxillary bone.

Careful investigation revealed a strumous diathesis existing in the family, but no history of tuberculosis could be ascertained.

According to good authorities cancrum oris more frequently occurs as a sequel of other diseases than *per se*. The statistics of Rilliet and Barthez show that out of 98 cases of this disease, 41 were following measles; 5 scarlet fever; 6 whooping cough; 9 intermittent fever; 9 typhoid fever, and 7 mercurial salivation.

To draw a conclusion in the case by these statistics and by watching the case closely from the start, Dr. McDonald asks, "Did this occur as the sequel of the typho-malarial fever which I diagnosed (remembering the poor state of health the child was in to begin with)? Or was it the result of mercurial salivation produced by the mercury given at the beginning and followed two days after by the syrup of the iodide of iron?"

DR. JAMES E. REEVES, of Chattanooga, said the case was evidently one of gangrene, which is almost necessarily fatal.

PRESIDENT COWAN asked if the character of the disease might not have changed. To which Dr. Reeves replied that there was nothing impossible in medicine, and the disease might have changed.

DR. E. T. CAMP, of Gadsden, Alabama, once saw a case similar to the one reported, which he pronounced gangrene oris, the whole of one cheek being destroyed. There was evidence of mercury having been taken in the early part of the illness of the patient. The case terminated fatally within a few days. The patient was 4 or 5 years old and of the lower class. He thought the gangrene was the result of mercurial poisoning which was administered during the early part of the illness.

DR. JAS. E. REEVES, of Chattanooga, then contributed a paper entitled

ON ALL SIDES A LEARNED DOCTOR.

The author introduced his subject by an earnest plea for higher medical education, stigmatizing cheap medical colleges, with no facilities for imparting instruction, as the greatest stumbling-blocks in the way of true progress. He next paid his attention to the present tendency to make one-sided physicians, and lamented that the department of gynecology was overrun with

cheap performers with the speculum, probe, dull curette, etc., and maintained that the specialist should build on the broad foundation of the general practitioner in order to reach professional eminence.

EVENING SESSION.

DR. ANDREW BOYD, of Scottsboro, Alabama, read a paper on

FRACTURE AT ELBOW JOINT,

and reported cases. He said after reduction there are but two methods of treatment of fracture at the elbow joint, viz., the extended or straight, and the flexed position. The author thinks the flexed position the better of the two, for the reason, 1, that in all cases surgeons fear ankylosis, and it is much better to have a flexed ankylosed arm than a straight one. The comparative use in each is apparent. 2. When splints have remained twenty-five to thirty days, the arm is atrophied and almost helpless; it is therefore easier to overcome the flexor muscles than the extensors, and a patient can extend an arm with more ease than he can flex it.

MR. SIDNEY B. WRIGHT, of Chattanooga, read a paper on

EXPERT TESTIMONY.

He drew the following conclusions: 1. That all the facts proved should be consistent with the hypothesis. 2. That the circumstances should be of a conclusive nature and tendency. 3. That the circumstances should, to a moral certainty, actually exclude every hypothesis but the one propounded to be proved. 4. That mere circumstantial evidence, unless the chain of circumstances is absolutely complete, ought in no case to be relied upon where direct and positive evidence, which might have been given, is withheld by the adverse party.

DR. W. G. BOGART, of Chattanooga, reported a *Case of Neurosis*.

DR. W. S. GAHAGAN, of Chattanooga, read a paper (by title) on *Neuralgia*.

(To be concluded.).

New York State Medical Association.

Seventh Annual Meeting, held at Mott Memorial Hall, New York, Oct. 22, 23 and 24.

DR. JOHN G. ORTON, OF BINGHAMTON, PRESIDENT, IN THE CHAIR.

FIRST DAY.

For President's Address see page 665.

Papers were read as follows: *Prognostics in Medicine*, by Dr. John Cronyn, of Erie County; *The Mimicry of Animal Tuberculosis in Vegetable Forms*, by Dr. E. F. Brush, of Westchester County, and a paper by Dr. A. Palmer Dudley, of New

York, entitled *A New Method of Surgical Treatment in certain forms of Retro-Displacements of the Uterus, with Adhesions*. In the afternoon there was a discussion on *Intra-cranial Lesions*, in which Dr. Jas. J. Putnam, of Massachusetts, Dr. Chas. K. Mills, of Pennsylvania, Dr. Chas. Phelps, of New York, and others, participated.

The questions propounded referred to: What are the present means of localizing intra-cranial lesions? What is the nature of the chief intra-cranial lesions (hæmorrhages, abscesses, tumors), and how can they be discriminated? What are the indications and contra-indications of operative interference in cases of intra-cranial lesions? What are the best modes of operating in cases of intra-cranial lesions? What are the immediate and also the remote results of operative treatment in cases of intra-cranial lesions?

A most interesting feature of the session was a paper on *Hypnotism*, read by Dr. H. Ernest Schmidt. He defended and upheld hypnotism as a remedial agent of the greatest value to the physician, though in a limited sphere. To fortify his position Dr. Schmidt related three cases from his own practice, in which he claimed an absolute cure from hypnotic influences. The first case was that of a sixteen-year-old girl, who suffered with nervous diseases, for which she had been treated by twenty-three physicians without success. Seven applications of hypnotic treatment effected a cure. In a second case neuralgia was cured, and in a third chronic rheumatism yielded to the mysterious influence. Dr. Schmidt attempted no explanation of hypnotic phenomena. His paper excited great interest among the attending physicians.

Dr. John W. S. Gouley, of New York, discoursed upon *Retention of Urine from Prostatic Obstruction; its Nature, Diagnosis and Management*. His treatment of the subject was exhaustive, lucid, and well fortified with numerous cases, and the exhibition of various surgical devices. He was careful to avoid advocating any instrument of universal adaptation, but pointed out the salient features of each.

SECOND DAY.

The morning of the second day, which was very stormy, opened with the Address on Surgery, *The Ligature of Arteries*, by Dr. Stephen Smith, of New York, which was elegantly presented in choice phraseology. The next paper, on *Exophthalmic Goitre*, was read by Dr. E. D. Ferguson, of Troy, N. Y., who confined himself mainly to its therapeutics.

Dr. George E. Fell, of Buffalo, was bulletined to read a paper on *The Death Penalty; Does the Garrote or Hanging ever produce Instantaneous Unconsciousness?* but, much to the disappointment of the audience, was absent.

The discussion on Obstetrics was opened by

Dr. S. B. Wylie Macleod, and involved the following queries: How may the present prophylactic measures in obstetrics be more extended and applied? Is the present technique, in the management of labor and convalescence, in accordance with sound physiology? To what extent have the surgical means of the treatment of labor complications been successful, or should these complications and the process of repair have been more generally left to nature? What influence would a more advanced obstetrical science have on the biological and social condition of the race?

The participants, who appeared in person or sent their papers, were Drs. Ira B. Read, Henry D. Nicoll, Wm. McCollom, Joseph W. Stickler, Geo. T. Harrison, T. J. McGillicuddy, A. Palmer Dudley, Wm. H. Robb, and Alfred L. Carroll.

At the night session Dr. Carlton C. Frederick, of Buffalo, delivered his address on Obstetrics, which touched upon the substantial advances of the year and claimed the attention of the audience until the reading of a paper by Judge Charles H. Truax on *The Medicine of the Classics*, which was replete with wit and humorous allusions.

THIRD DAY.

The morning session of the third day began with a paper by Dr. Martin Cavana, of Oneida, on *Expert Medical Testimony; or the Physician as a Witness*.

Dr. Benjamin M. Ricketts, of Cincinnati, O., an honorary fellow of the Association, read a paper entitled, *Some Observations on Bone and Skin Grafting*. He said: "Grafting, or dermepenthesis in the vegetable kingdom, has been developed to such an extent that there is hardly any limit to what may be done in the way of repair and production, beauty and financial gain being the greatest desiderata. While the results of grafting animal tissue are less gratifying than those of vegetable tissue, much has been done to convince us that the limit is far beyond anything yet attained. The oculists have displayed unbounded energy and exalted skill, as shown by their success in transplanting the cornea of the cat, dog and rabbit to the eyes of human beings, and of mucous membrane to the conjuncture, for the correction of deformity as the result of eye troubles in infancy. It is now demonstrated that the nerves of lower animals may be successfully transplanted to the nerve stumps of man. Dr. Redart successfully grafted the skin of a chicken upon a child two years old. Dr. Bartens succeeded in grafting the skin of a dead man seventy years old to that of a boy fourteen years old. Dr. Walfler was equally successful in transplanting the mucous membrane of frogs, rabbits and pigeons to mucous areas in man previously occupied by cicatricial tissue, and was the first to show that mucous membrane remains so if trans-

planted to mucous membrane, and become skin if transplanted to skin.

"I have succeeded in grafting the skin of a frog to that of a tortoise, and the skin of a tortoise to that of a frog; and also in securing the growth of a frog's skin upon the skin of a man fifty-four years old. Bone-grafting is not so far advanced, but has met the same success as skin-grafting. Enough has been accomplished to satisfy me that the day is not far distant when the long bones and ribs of the lower animals will be successfully transplanted to man for the purpose of restoring osseous structures destroyed by any cause whatsoever. I am inclined to believe that the tails of such animals as the cat, dog, opossum, etc., after being divested of the integument and soft tissue, may be transplanted with success. It may be found that the ribs of lower animals can be substituted for the small bones of the hand."

Dr. Thomas H. Manley, of New York, ably discussed the paper, and gave many corroborative instances from his hospital practice. He thought there was a future for the procedure yet undreamed of.

Dr. Joseph C. Greene, of Buffalo, read an interesting paper, detailing in part his personal experience with *Leprosy*, showing its distribution along coast lines, and the localities showing the foci of contagion. He mainly confined himself to the epidemiology and history of the disease. A large map aided in giving force to his remarks.

Dr. Homer O. Jewett, of Cortland, discoursed upon the *Use and Neglect of Blood-Letting*, in which he advocated its therapeutical claims. He gave many instances where relief and perhaps cures in pneumonia, pleurisy and apoplexy were prompt. He thought that delay often deprived the measure of its triumphs.

Dr. John Shrady, of New York, in his paper on *The Psychical Aspects of Insanity*, after touching upon some of the difficulties of diagnosis, referred to the fact that treatment to be successful must consist in antagonizing one emotion with another.

In the afternoon the following papers were read either by the authors themselves or by title: *Tumors of the Orbit and Neighboring Cavities*, by Dr. C. S. Bull, of New York; *Test of Dugas in Dislocation of the Shoulder*, by Dr. F. W. Putnam, of Binghamton; *Early Infant Viability, with Management of Cases*, by Dr. H. C. Hendrick, of McGrawville; *Scarlet Fever in Puerperium, with Cerebral Hemorrhage and Hemiplegia*, by Dr. C. S. Allen, of Greenbush; *Alcoholism as a Vice, and as a Result of Inherited or Acquired Brain Disease*, by Dr. I. de Zouche, of Gloversville.

Dr. Wm. H. Robb, of Amsterdam, exhibited an office battery, simple in construction and easily constructed by a person of ordinary ingenuity. He claimed for it easy portability and as taking up but little space.

Dr. Darwin Colvin, of Clyde, in his contribution with the title *In Abortion, what of the Placenta after the Second Stage*, advocated immediate removal. Drs. A. L. Carroll, S. W. B. M. McLeod, John Parsons and H. O. Jewett coincided with this view. Dr. E. D. Ferguson advised curetting with the finger or wire as the most effectual means of removal.

The other papers, to-wit: *Cysts and Cystic Formations; their Pathology, Diagnosis and Treatment*, by Dr. T. H. Manley, of New York; *Functional Disorders of the Nervous System of Women*, by Dr. T. J. McGillicuddy, of New York; *The Feeding of Infants*, by Dr. J. P. Garrish, of New York; and *A Case of Craniotomy, with Remarks*, by Dr. Jas. W. Guest, of New York, were crowded out by the lateness of the session, but were referred for publication.

Officers were elected as follows: President, Stephen Smith, New York; Vice-Presidents, A. F. Van Vranken, West Troy; J. D. Tripp, Auburn; R. J. Menzie, Caledonia; Members of Council, W. D. Garlock, Little Falls; George Douglas, Oxford; Theodore D. Strong, Westfield. Dr. E. D. Ferguson, of Troy, was re-elected Secretary. The treasurership was left vacant.

At 4 o'clock the retiring President, Dr. John G. Orton, surrendered his seat to his successor, Dr. Stephen Smith. After a brief address by the new President the meeting was adjourned. The new Council was immediately called together, and it was decided to hold the next meeting of the Association in Mott Memorial Hall on the fourth Wednesday of October, 1891.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Self-murder on the Continent—Cremation—Opening of Queen Margaret College, Glasgow—Soja Biscuits for Diabetics—Housing of the Working Classes—Miscellaneous Gleanings.

From St. Petersburg comes a thrilling story of a Professor of Medicine who took poison in the very act of lecturing to his class, while in Paris the daily number of cases of self-murder is said to range from twelve to eighteen. Nor is there forthcoming any scientific explanation of the phenomenon of the sort in which the late Mr. Buckle took delight. In the spring people who are tired of life mostly drown themselves in the Seine, in the autumn they prefer to asphyxiate themselves by means of charcoal fumes. That is all the statisticians tell. The question which remains for the present unanswered is, What is the real cause of this alarming predisposition to self-murder?

Miss Graham, M.D., and Miss Baumler, M.D.,

former students of the London School of Medicine for Women, have been appointed lady doctors under the Marchioness of Dufferin's Fund in India. The former will serve at Rangoon and the latter at Lahore.

Cremation appears to be making way in Manchester. The report of the local society states that the limited company formed for the erection of the crematorium has been duly organized and registered, and that about three thousand shares have already been subscribed for. Under these circumstances the question has arisen whether the society may not be considered to have fulfilled its purposes, but on reflection it has been decided that there is room both for the Manchester Cremation Society and the Manchester Crematorium. The report observes, "The crematorium may be erected, but if public attention be not directed to its existence and the benefits arising from its use, the company will fail for want of adequate resort." It is pointed out that in this matter England has been outstripped by other countries. France, Italy, Germany and America all avail themselves to a much larger extent of this method of disposing of the dead. In Paris the Municipal Council has built a crematorium in the cemetery of Pere la Chaise, where in the first eight months 518 bodies were cremated. In Italy, where the first crematory, that at Milan, was built in 1874, there are now forty communes which have built furnaces for themselves. In England, on the other hand, there is but one at the present time, and that is situated at the inconvenient distance of twenty miles from London, and even there the number of cremations has so far reached a comparatively small number.

The present winter has seen the opening of Queen Margaret College, Glasgow. This gives to Scotland the distinction of possessing two schools for the training of lady doctors. It is difficult to believe now, with all the facilities that women enjoy for entering the medical profession, that it is only sixteen years since the London School of Medicine for Women was first opened amidst a storm of derision and contempt. It is history, too, how the University of Edinburgh refused admission to the sex and was backed by a decision of the Scottish Court of Sessions. Yet on the 1st of October, it is found that a fifth school is necessary in addition to those of London, Edinburgh, Dublin and Belfast, to meet the continuous demand from the East for lady doctors. The success which has attended the movement has exceeded the most hopeful claims made for it in years past by its pioneers, while many of its former opponents have frankly confessed that their opinions have been entirely changed on seeing that women doctors neither became unwomanly nor interfered with men in their pursuit of the profession.

It is now more than twenty years since Dr. Forbes Watson drew special attention to the high percentage of nitrogen—over 70 per cent.—contained in the cotyledons of the *Soja hispida* or “Soy” bean of India, but from some cause or other no attempts—or at least no successful attempts, appear to have been made to dietetically utilize the bean. Some new biscuits prepared from the *Soja* have been brought out, and these are stated to be well adapted for use amongst diabetic patients, by reason of the insignificant proportion of starchy and saccharine matters they contain. The biscuits, unlike several “diabetic” productions, are not at all unpalatable, and indeed may be said to be rather nice than otherwise. Consequently they are likely to become popular with patients.

Mr. Ritchie, in his capacity of President of the Local Government Board, has directed the attention of the County Councils in the country, and sanitary authorities, vestries and District Boards of the metropolis, to the provisions of the Act passed last session as to the housing of the working classes. This Act has greatly extended the powers of the local authorities. Heretofore in towns houses could not be condemned unless the medical officer of health alleged that the prevalence of disease in the district might be reasonably attributed to the sanitary defects of the dwellings. Henceforth it will not be necessary to await the outbreak of disease. The stable doors may be locked before the steed is stolen. It will be enough for the medical officer of health to represent that the sanitary defects are dangerous or injurious to the health of the inhabitants or their neighbors. The compensation to be given to the owners of any houses in an unhealthy area acquired for an improvement scheme will not be based on the rental if that rental has been swollen by dangerous overcrowding. If the houses are deemed utterly unfit for habitation, only the value of the land and of the materials of the buildings will be allowed. Apart from improvement schemes, important powers are given to the local authority to deal with unhealthy dwellings. The medical officer of health is expected to keep himself informed about such houses, and where he does not take action of his own accord he is bound to take notice of the complaint of any four neighboring householders. Urban sanitary authorities have also the power, under the new Act, of building and furnishing lodging-houses for the working classes, but this part of the Act cannot come into force in rural districts unless it has been adopted by the sanitary authorities after a local inquiry directed by the County Council.

A rather unusual case occurred at the Dover County Court. A surgeon sued a retired medical practitioner for £21 for professional attendance. Defendant contended that it was the custom in the medical profession not to charge each other

for attendance. Plaintiff and another medical gentleman said that although it was not usual to charge a man in practice, it was usual to charge a retired medical man. With this the judge agreed and gave judgment for the plaintiff.

It appears after all that there is but slender foundation for the alarming report that the influenza epidemic had reappeared in the city of London. One leading practitioner states that he has heard of only four cases, and they were all in one family, while another suggests that the symptoms of other maladies have been mistaken for those of influenza.

The authorities of the Metropolitan Asylum Board have been compelled, in consequence of the rapidity with which fever cases are coming into the London hospitals, to open huts at Gore Farm, Darenth, for convalescing patients. For some time past the cases have been coming into the six hospitals at present open at the rate of forty a day, and at the present there are 2,147 cases under treatment.

With the object of continuing the work of popularizing the use of short-hand amongst medical students, an examination in general proficiency in short-hand and the methods of its use will be held at the Examination Hall of the Royal Colleges of Surgeons. G. O. M.

DOMESTIC CORRESPONDENCE.

“Limited Practice” and the Code of Ethics.

To the Editor:—The leading editorial in the *Peoria Medical Monthly* for September, 1890, commences with the following paragraph: “We believe the Code of Ethics of the American Medical Association permits of advertising to the extent of an announcement, ‘*Practice limited to diseases* —,’ following the name of the advertiser.” And throughout the article the writer assumes that the Code of Ethics actually gives permission to advertise “practice limited” to this or that specialty, whereas, there is not a word in the Code of Ethics relating to specialties or to “practice limited,” as I have had occasion to explain many times. The only clause in the Code referring to advertising is in the following words:

It is derogatory to the dignity of the profession to resort to public advertisements or private cards or handbills, *inviting the attention of individuals affected with particular diseases*;—publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

The origin of the phrase, “practice limited,” is to be found, not in the Code of Ethics, but in the

report of a committee on a revision of the Code of Ethics made to the Association in 1874, as the following quotation shows:

The Code of Ethics very properly makes no mention of specialties or specialists, but presents plainly the rules necessary for the maintenance of professional character as applicable to all. But we are asked how, then, can those who wish to pursue a special practice make known their position to their brethren and the public? We answer that the title of Doctor of Medicine covers the whole field of practice, and whoever is entitled to that appellation has the right to occupy the whole or any part of the field, as he pleases. The acceptance of this honorable title is presumptive evidence to the community that the man accepting it is ready to attend practically to any and all duties which it implies. As all special practice is simply a self-imposed limitation of duties implied in the general title of Doctor, it should be indicated not by special qualifying titles, such as oculist, gynecologist, etc., nor by any setting forth of special qualifications, but by a simple *honest* notice appended to the ordinary card of the general practitioner, saying, "practice limited to the eye and ear," or to "diseases peculiar to women," or to "midwifery exclusively," as the case may be. Such a simple notice of limitation, if *truthfully* made, would involve no other principle than the notice of the general practitioner that he limits his attention to professional business within certain hours of the day. Neither could it be regarded as a claim to special or superior qualifications. To give the specialist any privileges beyond this, would be to invest him with a special advantage inconsistent with the equality of rights and duties pertaining to the profession.¹

It should be kept in mind that this quotation is simply the reasoning or comment of the committee and not a proposition to be incorporated into the Code. So far from this, the committee, after commenting on several other topics, closed its report with the following declaration: "After carefully reviewing the whole subject your committee do not recommend any alterations in the present Code of Ethics." And on motion of Dr. J. H. Van Deman, of Tennessee, the report was unanimously adopted by the Association.

Whether the suggestion of the committee, that the regular physician who honestly and actually restricts his practice to a fairly defined specialty, may so inform the public by saying on his card "practice limited to ———," is a question about which different opinions have been expressed, and concerning which no judicial action has been taken. But it is certain, as stated by the editor of the *Peoria Medical Monthly*, that the physician who makes such declaration on his professional card, must practice in strict accordance therewith. He cannot declare to the public and his professional brethren that his *practice is limited* to particular diseases or to diseases of particular organs, and continue to take charge of any and all cases that may come in his way, without making himself liable to the charge of deception and unprofessional conduct. And for that reason it is not likely to be generally adopted; simply because only a small percentage of the so-called specialists are willing to actually *limit* their practice to

the legitimate boundaries of their chosen specialty.

Very truly,
Chicago, Ill., Oct. 25, 1890.

N. S. DAVIS.

To the Editor:—Please see page 446, second column, near top of page (for September 20, 1890), where your New York correspondent says: "Consumption being peculiarly a disease of *civilization* (italics mine), is nourished by bad air and overwork amid insalubrious conditions," etc.

Now, just what condition of living constitutes the condition the writer regards "civilization," I am unable to tell; but I do know—from years of personal observation—that our North American Indians, especially those that most nearly approach savagery, not only often die of various forms of phthisis, but are far more subject to tuberculosis (pulmonalis and other forms), than the white people of any city in the United States. And not only so, but the Indians who live and ramble over the Rocky Mountains, from British America to Mexico, are also quite subject to phthisis pulmonalis (and other forms of phthisis), notwithstanding they breathe (when out-doors) the best air on our continent. Your correspondent, and most all our Eastern (American) medical book-makers should, at least, make themselves very familiar with disease in all parts of our own country—to say nothing of foreign parts—before presuming to teach what they do not know.

See in 7th edition of "Da Costa's Diagnosis," page 904, where he says of dengue: "Dengue is generally a harmless disorder, epidemic and contagious."

While the notorious facts, in reference to the effects of dengue here in Texas, as it has prevailed more or less extensively, at times, for many years past, are that it is not a "harmless disorder" in any sense of that term, for it is well known that our puerperal (and pregnant women not advanced to full term) in many (I may say most) cases, lost their lives as a result of dengue, to say nothing of many male (and female) persons who were first made seriously and painfully sick for a week or more, and left invalided for several or many months, and if of consumptive tendency, to die within a year or less, of phthisis. Now is this a "harmless disorder?" Yet Dr. Da Costa is a learned physician, whom we (Americans) are all proud of, and delight to honor, but had he followed the example of the great medical philosopher, Daniel Drake, he would not have fallen into such harmful blunders. Da Costa should have studied dengue "on the ground," in its native domestic habitat, then wrote not as the "scribes" (of Eastern bookdom) but as "one having authority." As the great Trousseau so often urged us, we (as students) as writers, should be always seeing and studying patients, and under

¹ See Transactions, Vol. 25, pp. 30-31, 1874.

all sorts of conditions and environment; then profoundly consider the why and wherefore of all we see and observe. But I hope you will pardon me for "bringing coals to Newcastle"—unbidden at that. Most respectfully yours,

Q. C. SMITH, M.D.

Austin, Texas, Oct. 17, 1890.

BOOK REVIEWS.

THE MEDICAL NEWS VISITING LIST, for 1891.
Philadelphia: Lea Brothers & Co.

Messrs. Lea Brothers & Co. again present their compliments to the medical profession, and place upon the market their Physicians' Visiting List for the ensuing year. In addition to a variety of tables, valuable as a means of ready reference, such as doses, poisons and their antidotes, therapeutic tables, weights and measures, there are others upon artificial respiration, ligation of arteries, signs of dentition, and of pregnancy, urinalysis, and also a table of many of the newer remedies. The present arrangement of the book is the result of years of experience and will be found every way acceptable to the profession.

MISCELLANY.

LETTERS RECEIVED.

Dr. F. D. Green, Louisville, Ky.; Wilson & Webb Stationery Co., Little Rock, Ark.; Dr. C. Stover, Amsterdam, N. Y.; Dr. H. P. Jefferson, Lowell, Mass.; Dr. L. D. White, Keokuk, Ia.; Dr. A. G. Sinclair, Memphis, Tenn.; The New Orleans Medical and Surgical Journal, New Orleans, La.; C. A. Kirkly, Toledo, O.; Dr. J. E. Mears, Philadelphia, Pa.; Dr. H. Wardner, Post-Graduate Medical School and Hospital, Dr. J. C. Hoag, Chicago; Dr. R. W. Gardner, The Maltine Mfg. Co., J. F. Madden, Robinson-Baker Advertising Bureau, Dauchy and Co., I. Haldenstein, The Chas. H. Phillips Chemical Co., New York City; Dr. Chas. A. Eastman, Winthrop, Mass.; Dr. W. W. Wheeler, Muir, Mich.; Dr. A. R. Baker, Cleveland, Ohio; Dr. A. W. McColl, Toronto, Ont.; Dr. R. W. Campbell, Montreal, Canada; Dr. S. G. Webber, Jamaica Plain, Mass.; Dr. J. Mc. F. Gaston, Atlanta, Ga.; Dr. D. C. Brockman, Marengo, Iowa; Dr. A. D. Barr, Calamine, Ark.; Dr. J. W. Thornton, Kansas City, Mo.; Henry Bernd & Co., St. Louis, Mo.; Fort Dearborn National Bank, Dr. W. W. Hester, Chicago; Dr. I. A. Woodhull, Fort Leavenworth, Kansas; Dr. F. S. Dennis, New York City; W. C. Clemison, Warrenton, Mo.; Dr. B. A. Camfield, Chicago; Provident Chemical Works, St. Louis, Mo.; Dr. F. H. Caldwell, Sanford, Fla.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 25, 1890, to October 31, 1890.

First Lieutenant J. D. Glennan, Asst. Surgeon, is granted leave of absence for one month, to take effect about the 31st inst. Par. 1, S. O. 146, Dept. Missouri, October 23, 1890.

By direction of the Secretary of War, the following changes in the stations of officers of the Medical Department are ordered:

First Lieut. Chas. E. Woodruff, Asst. Surgeon, is relieved from duty at Ft. Gibson, Cal., and will report in person to the commanding officer, Ft. Missoula, Mont., for duty at that post, relieving Major Calvin DeWitt, Surgeon. Major DeWitt, upon being relieved, will report in person to the commanding officer, Ft. Hancock, Tex., for duty at that post. Par. 6, S. O. 249, A. G. O., Washington, October 24, 1890.

Capt. Charles B. Ewing, Asst. Surgeon, leave of absence granted in S. O. 131, Dept. of the Missouri, September 22, 1890, is extended fourteen days. By direction of the Secretary of War. S. O. 250, A. G. O., October 25, 1890.

Capt. Guy L. Edie, Asst. Surgeon U. S. A. (Ft. Douglas, Utah), is granted leave of absence for one month, on surgeon's certificate of disability. S. O. 80, Hdqrs. Dept. of the Platte, Omaha, Neb., October 27, 1890.

Surgeon Stevens G. Cowdrey, U. S. A., is granted leave of absence for one month, with permission to apply for an extension of fifteen days, to take effect upon the arrival of Acting Asst. Surgeon A. P. Fricke at Ft. Marcy. Par. 2, S. O. 112, Dept. of Ariz., Los Angeles, Cal., October 24, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 1, 1890.

Surgeon F. B. Stephenson, detached from receiving ship "Wabash," and wait orders.

Surgeon H. M. Martin, ordered to the receiving ship "Wabash."

Asst. Surgeon Lewis H. Stone, ordered to the U. S. S. "Pinta."

Asst. Surgeon William F. Arnold, detached from the U. S. S. "Pinta," and granted two months' leave.

Surgeon Thomas Owens, detached from the Coast Survey Str. "Blake," and wait orders.

Asst. Surgeon N. J. Blackwood, ordered to the receiving ship "Vermont."

Asst. Surgeon E. S. Bogert, detached from the U. S. receiving ship "Vermont," and to the Coast Survey Str. "Blake."

Surgeon A. M. Moore, detached from the U. S. S. "Kearsarge," and to the Naval Hospital, Mare Island, Cal.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending October 25, 1890.

Surgeon W. H. Hutton, detail as chairman Board of Examiners revoked; ordered to Washington, D. C., for temporary duty. October 14, 1890.

Surgeon Walter Wyman, to inspect quarantine stations. October 14, 1890.

Surgeon W. H. Long, detailed as chairman, Board of Examiners. October 14, 1890.

Surgeon H. W. Sawtelle, granted leave of absence for five days. October 13, 1890.

Surgeon J. M. Gassaway, granted leave of absence for thirty days. October 11, 1890.

Surgeon Fairfax Irwin, detailed as recorder, Board of Examiners. October 14, 1890.

P. A. Surgeon R. P. M. Ames, granted leave of absence for thirty days. October 14, 1890.

P. A. Surgeon J. H. White, granted leave of absence for thirty days. October 24, 1890.

P. A. Surgeon W. J. Pettus, to proceed to Vineyard Haven, Mass., for temporary duty. October 9, 1890.

Asst. Surgeon T. B. Perry, ordered to examination for promotion. October 9, 1890.

Asst. Surgeon J. J. Kinyoun, ordered to examination for promotion. October 10, 1890.

Asst. Surgeon A. W. Condit, to proceed to Baltimore, Md., for temporary duty. October 18, 1890.

RESIGNATION.

P. A. Surgeon R. P. M. Ames, resignation accepted by the President, to take effect November 15, 1890. October 14, 1890.

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ORIGINAL ARTICLES.

THE SURGERY OF THE ABDOMEN, WITH
SOME OF ITS RESPONSIBILITIES.

*Read in the Section of Medical Jurisprudence, at the Forty-first
Annual Meeting of the American Medical Association,
Nashville, Tenn., May, 1890.*

BY THOMAS H. MANLEY, A.M., M.D.,
VISITING SURGEON, THE HARLEM HOSPITAL, NEW YORK.

In these days, the closing decade of the nineteenth century; a century which has changed the whole face of civilization, and which has demonstrated by fact, that which it would seem could be but the revelation of a dream, it behooves those of us in life, whose part is confined to the healing art, to not only press forward, with the tide of progress, but we should also look into the retrospective, with a view of reaching a rational estimate of the position which we occupy, to-day.

The application of physics and chemistry, in manufactures, commerce, and the arts has wrought most marvelous changes. Steam and electricity, have annihilated distance; and with the rapid, onward pace of inventive genius, it would seem, that the time is near at hand, when they will wholly supplant manual labor, and entirely supersede animal force as a motor. An intelligent and broad comprehension of Nature's forces, has enabled us, to better understand, vital, physiological, and pathological processes.

While such enormous strides have been made, in the many and varied occupations of man, the healing art has kept well abreast, and in some respects, even ahead, in the race for brilliant achievements.

Experimental chemistry gave to humanity the greatest boon, ever conferred—anæsthesia. By the aid of chemistry, with the use of the microscope, we need have no more *materies-morbi*. The morbid material is the same, as since the creation of man, but we separate, isolate and distinguish its varied elements, with rapidity and precision.

A better knowledge, and greater familiarity with the agencies of Nature have emboldened us, to explore regions of the body, which heretofore, had been regarded, through tradition, handed down to us, from one generation to another, as

utterly and absolutely beyond the scope of human intervention; and bold indeed were the pioneers, who dared to defy the dogmas, of their age, and and push forward in the face of an unbroken opposition, and break, ground hitherto untrodden.

Among such were Nathan Smith of New Hampshire, and Ephraim McDowell of Kentucky, who about the same time, in widely separated sections of our country, in almost its colonial days, essayed to deal with ovarian tumor by abdominal section. Notwithstanding the rapid and successful progress of the ovarian operation, when all its technique were mastered; yet, surgeons whose pens have illumined the pages of medical literature, and whose names still adorn the profession, hesitated to open the peritoneal cavity for the relief or cure of any sort of neoplasm and condemned especially, every kind of interference, in cases of gunshot or penetrating wounds, of the abdomen. Sad, indeed, was the fate of him, whose bowels became obstructed, from within, or of the soldier on the field of battle whose abdomen, was torn open by shot or shell.

The prejudice of the older surgeons was so unanimous, and emphatic, in condemning interference, in these cases, that it seemed to savor of positive superstition. This appeared all the more so, when they could not well explain the grounds of their objections, and could only say that their experience had led them to this conclusion. In the meantime the microscopists were busy and had discovered a multitude of various pathogenic germs; and Lister had informed the world, how the development of these germs could be prevented, when in the proximity to wounds or traumatism. Now that the patient was spared the torture of the scalpel, by anæsthetics, and the contamination of the peritoneum rendered impossible, it was but natural, that the ambitious and enthusiastic young operator, would split up the mesial plane of the abdomen, with as little hesitation as he would open an abscess.

Indeed so far were distinguished and experienced surgeons carried away with the germ theory of disease, that not long ago they maintained that surgery could scarcely attain further perfection; and a distinguished author says,¹ that greater

¹ Erichsen & Birg, latest edition.
² N. Senn, Surg. Bacteriology.

advances have been made in pathology, during the past fifteen years, than during the three, preceding centuries.

When serious, well-informed writers, will allow themselves to make such sweeping unfounded assertions as these, it can hardly be wondered at, that the average practitioner imagines that the millenium has arrived, and he can learn no more.

In no portion of the body, did operators more promptly and boldly put into practical application, those principles enunciated by modern investigators, than in that region in which are lodged the organs of digestion; and reproduction in the female; so frequently, and apparently successfully, that it certainly did seem for a time, that at last, the difficulty of dealing with lesions and growths—traumatic, and pathological—within the peritoneum, was solved. It was said that an exploratory incision, was harmless. An impression prevailed, that one might open and explore the recesses of the complex structure of the peritoneum, with as much impunity as one would raise the lid of a chest, and examine its contents.

As late, as a year ago, our journals, home and foreign, fairly teemed with reports of cases, involving the surgery of the peritoneum; from the learned and conservative professor, down to the humblest members, in the ranks. There were a few, however, who ventured to raise their voices, against what they conscientiously regarded as an abuse; arising from an indiscriminate performance of an operation, which has its limitation. But their warnings were unheard, in the din of the multitude; the new operation gathered fresh strength, and new adherents, until at last, it looked like rank presumption, for any one to question its merits. However, in the progress of time—not a very long time—a halt was called, and within the past year, many of its most ardent advocates, have discovered that very serious consequences may, and do follow abdominal section; and that in the hands of the careless or inexperienced, it may be followed by pathological conditions more serious, than those, for which it was undertaken to cure, or alleviate.

In the present instance I propose to consider briefly, the question of abdominal surgery, from a conservative standpoint.

It is indispensable at the outset, that we strive to master a practically comprehensive knowledge of that structure, designated the peritoneum; summarizing in as few words as possible, its gross anatomy, physiology and pathology. Histologically composed of endothelial cells, with a framework of fibrous tissue; in which are situated the serous follicles, blood-vessels, nerves, and lymphatics. In its entirety it is a gauze-like structure, translucent and elastic. It is composed of various layers, reflexions, and duplications. It contributes partly to the investment of all the abdominal viscera, with few exceptions; and gives

off a coming to those stalk-like structures of connective-tissue, the ligaments, organic, and mesenteric, through which the blood-vessels, nerves, and lymphatics pass, in maintaining the nutrition of the parts, which they support and protect.

It has been described as the visceral and parietal and its cavity, in the male, is a hermetically closed sac. Besides, being supplied by the cerebro-spinal system, the nerves of the peritoneum are in free communication with the solar plexus, whose ganglia are within its folds, and supply all the abdominal viscera.

Physiologically the peritoneal cavity is lymph sac; in the normal state it is destitute of sensation. Its secretion serves the purpose of lubrication, so that the intermittent vesicular movements of the many and varied convolutions may be easily maintained. It will bear without detriment, especially in the female, very considerable distension, provided it is gradually applied. It is of varying dimensions, ever changing with the process of digestion. Its contents are of a solid, liquid, and gaseous nature. It is walled in or enclosed by bony and fleshy structures; the girth, or most dependent portion, consisting almost exclusively of muscular tissues, except, in the mesial plane, and in the inguinal regions. Many anatomists describe a median-line of fibrous composition, here, but there is none, strictly speaking in the male, or the non-child-bearing woman. Hence, except in the very limited areas stated, it is impossible to divide the abdominal walls without including muscular tissue.

Pathologically the peritoneum like all other serous membranes of its class, is exquisitely sensitive to irritants of every description, and is extremely intolerant to direct manipulation, of any degree whatever; resenting both, invariably, by active inflammatory action of a local or general character. Besides, in inflammations of metastatic type, we often meet with others, occasioned by contact with some of the organs diseased, which it infests.

Peritonitis of every phase or degree, is of very much more frequent occurrence in the female sex; with them it is comparatively seldom mortal, except, that septic variety, associated with the parturient state. Owing to the dangers of infection extending up the genital tract in woman; to lacerations and contusions, inflicted by the indiscreet or unskilled accoucheur in instrumental delivery, and lastly to the singular development of tumors, and degenerative processes, seen seldom except in woman, we may easily account for the greater frequency of inflammation, in this membrane, with them.

To account for the difference in mortality, in the sexes; we may explain it, in part at least, by the fact, that physical suffering, is much better borne, with woman. They survive a hæmorrhage, which in the male, must be inevitably

mortal, in connection with operations involving the peritoneum.

There is another factor which tells against the male sex, in this situation; which strange to say I have never seen mentioned by authors; I refer to the respiratory act, which in the male, is nearly, wholly abdominal, while in the female it is thoracic. The lower trunk of the latter, may be tightly and motionlessly braced, by a corset or binder, with comfort; which if applied to the male, would promptly induce asphyxia.

We all know, how quickly, and frequently fatal peritonitis is, with the sterner sex, when tympanitis is well developed, while a woman tolerates it, without very serious inconvenience.

Taking the abdominal contents as a whole, we find nothing anatomically, physiologically or pathologically, which indicates, that they are not, subject to the same mutations and influences, as other regions of the body.

THE TRAUMATIC SURGERY OF THE ABDOMEN.

It has usually been undersood in our profession that the duties of the surgeon commence, where those of the physician end; and that while it is impossible for the surgeon to ever attain eminence in his art, who is not thoroughly conversant with the properties, qualities, and actions of medicines, yet his aid is seldom invoked except when these have failed, or are inadmissible. Exclusively of traumatism I question the propriety of the surgeon ever undertaking an operation of serious gravity, without, first consulting with the physician, for it is my conviction, that it is with the latter to decide, when to do an operation, and with the former, to perform it.

My experience latterly, has been, that this prudential course, is at present, being generally disregarded, very much it is feared, to the disadvantage of the patient. And in no class of cases in my judgment is this coöperation more essential and imperative, than in the lesions involving the peritoneum.

A man or woman is shot or stabbed in the abdomen; perhaps he is violently crushed; fallen from a great height, or has been run over by a vehicle; he has sustained a traumatism in the ventral region. The medical attendant is called. He finds his patient in more or less shock, and somewhat dazed. His pulse is quick, and thready, and he is alarmingly prostrate.

Now perhaps by a careful examination, one may be able to decide with some accuracy, the extent of injury. If a serious injury whether for instance, a solid viscus has been penetrated or lacerated, etc. The state of the abdomen may indicate, where no well marked constitutional symptoms prevail, whether there be extensive hæmorrhage.

Little more than this can be gleaned on an immediate examination. The physical diagnosis

of abdominal lesions is an art, unlearned. All is yet, uncertainty, doubt, and conjecture; and no living man can predicate what an abdominal incision will reveal, in a very large number of lesions. This state of affairs must remain, until the physics of acoustics is brought to the perfection of optics. The medical attendant will direct his attention towards giving his patient relief from pain, and tiding him over immediate shock. Now when distress has been appeased, and provided that death is not impending the physician is allowed a breathing spell. Perhaps for the first time in his life, he actually realizes what a severe abdominal injury is. The time for theorizing is past, the time to act, has come. Is his patient's vital current slowly draining away, into the peritoneal cavity? Has the bowel ruptured, or has the urinary bladder bursted?

If it appears to him that some one of these accidents have occurred, what will be done?

Will the surgeon wait on nature and treat the case on general principles or will he take time by the forelock and anticipate her?

If he is an orthodox antiseptist, and believes that septic contamination is the only danger, attendant on laparotomy, if he imagines that the deductions drawn from experiments on the lower animals are applicable to man; if he is ignorant of the serious consequences which may follow the mere handling of the intestine; then indeed he is guilty of positive, criminal neglect if he fail to make the exploratory incision.

Here and now, we come to the knotty part, of our subject, we have arrived at that point where it becomes imperative, to decide which road to take; which line that will lead to the safest terminus; whether or not, it may not, be as well to rely on nature's unaided powers, or whether having in mind the obscure character of all abdominal lesions, one is not justified in making an exploratory incision.

Until a very recent period the consensus of opinion was that if a laparotomy was done at all, in abdominal traumatism it should be performed promptly; some even maintaining that it added nothing to shock. As a consequence, in the city of New York alone, within the past six years—from October, 1883, till October, 1889—thirty abdominal sections were made for penetrating gunshot and stab wounds of the belly.

The mortality attending those operations was something appalling, as we will later see; though with few exceptions they were done under every possible precaution, which all our well equipped hospitals provide, under the hands of skilled and veteran operators, with an ample corps of trained assistants, and nurses. Very few survived the ordeal. No doubt, but with many of the cases the wounds were mortal; but there are not a few, in which the intra-peritoneal injury was not extensive; and one of those reported, was a case in

which no lesions of any kind were discovered among the viscera; yet the patient succumbed, immediately on closing the main incision. Hence while none can doubt but the exploratory incision, saved a few lives, there can be no question, on the other hand while admitting this, that more than one life was cut short by efforts adopted to save it.

That this is not a statement of speculative conjecture, with a prejudicial bias, has been definitely settled by Dr. Lewis A. Stimpson's statistical and analytical monograph of last autumn, on "Penetrating Gunshot Wounds of the Abdomen." According to the figures there presented the mortality was, when the peritoneum was opened, much greater than when the cases were treated by the expectant plan. This may be partly explained, on the hypothesis that none were submitted to operation; but the worst cases. Against this, however, we have the evidence in many of the cases spared the scalpel, of grave lesions. In many of those cases it is more than probable that the patients or their friends' emphatic objection against any sort of evisceration stayed the operator's hand.

So much being conceded, with reference to operations involving the peritoneum, we should strive to seek out the causes which lead to disaster, and try to obviate or eliminate them, but before we leave this part of the subject, it may be well to investigate the processes by which the full functional activity of the parts may be restored by the *vis medicatrix nature*.

Shock follows all serious disturbances of the abdominal cavity. The vital powers, for a time are at a low ebb, and preclude every sort of violent interference, until reaction is well established. Next to bleeding in this situation, after an injury comes inflammation. This is always a serious sequel when extensive. Always perforation of the bowel is a serious matter, when it occurs below the ileo-cæcal valve, for here the final act of digestion ends and, only below here, do we find real faeces.

The intestinal contents during healthy digestion, above the cæcum, while capable of exciting acute inflammatory action, cannot, and do not, possess, the toxic, putrid properties of the lower gut, and in the dog at least, small quantities do no harm whatever, except to excite adhesive inflammation. As a rule, however, unless the intestine is extensively wounded, very little of its contents can escape. In gunshot wounds, the well-known valvular puncture made by the missile is immediately and permanently filled, by the contraction and eversion of the mucous coat, completely obliterating the rent. Simultaneously, with this salutary provision of nature, peristalsis ceases, while the work of repair is going on. If the patient survives, inflammation promptly ensues, and if of a limited and moderate degree its

presence is indispensable as a factor of repair. The peritoneum possesses a most singular propensity when inflamed to take on adhesions with everything in which it comes in contact. It will wall off the sound from the diseased, in a most marvelous manner, in this way preserve the general cavity from contamination or invasion. If the inflammation take on a septic course, the patient is surely doomed; but much will depend on surroundings, the nursing, and medical attendance, for its development.

(To be concluded.)

THE SCIENTIFIC ASPECTS OF MEDICAL HYPNOTISM, OR TREATMENT BY SUGGESTION.

Read before the Chicago Medico-Legal Society, October 4, 1890.

BY M. H. LACKERSTEEN, M.D., M.R.C.P., ETC.,
PROFESSOR OF MEDICAL PHYSICS AND ELECTRO-THERAPEUTICS;
CHICAGO POST-GRADUATE SCHOOL OF MEDICINE.

Mr. President and Gentlemen:—

Of all the extensive additions made to modern therapeutics nothing seems to have attracted so much general attention as hypnotism.

Of all modern remedial measures hypnotism has secured perhaps the most numerous, zealous, and competent investigators: and yet it is without doubt the least popular with the profession. Since the time when chloroform was first employed as a means of reducing the pain of childbirth, nothing has occurred in the history of medicine of so revolutionary a character as the use of hypnotism. Nothing has excited at once so much expectation, apprehension, horror, hope, credulity and skepticism as the voluminous writings of the savants who have pursued hypnotic researches during the last eight or ten years; and yet it is by no means a new invention or discovery.

We are told that the practice of hypnotism dates far back into almost prehistoric times; and under various names and institutions it is supposed to have influenced generations of mankind. In ancient India, Egypt, and Greece it was practiced by the religious teachers who held it to be supernatural, and such teaching no doubt gave considerable power to the priesthood, and invested it with much authority in the estimation of the people. It is also supposed to have been the source of many of the tales of magic and miracle during the middle ages in the cure of disease and the relief of human suffering. However this may be, hypnotism, as it is known today, originated with James Braid, of Manchester. He demonstrated the fact that by fixing the attention or the gaze on any object, a person could

¹ This paper was prepared in compliance with the request of the President of the Chicago Medico-Legal Society, made to the writer in February, 1890.

be hypnotized, thus controverting the theory of Mesmer of the existence of a magnetic fluid which was supposed to pass from the operator to the subject in producing the condition known as the Mesmeric trance.

Thirty years ago Liebault, of Nancy, in France, was able to dispense with even the necessity of gazing at an object in order to obtain hypnosis. He found that the mere suggestion of sleep, made to a willing and susceptible patient, was sufficient to induce it. Prof. Bernheim who had studied the question with Liebault, and had accepted the latter's views, published a book on suggestions in 1884. He reported several examples of the curative effects of hypnotism, the phenomena of which he declared to be entirely of a psychical nature.

In 1878 Charcot began his public classes in which he drew attention to the physical states of hystero-epileptics during hypnosis. Among his pupils and followers, as we all know, are a great many distinguished French and German savants; but Charcot's researches had little effect upon the further pursuit of the inquiry. Not until the successful methods of the Nancy school had become known through Bernheim did the question become an active one throughout the civilized world. Hypnotism has now found an entrance into Switzerland, Belgium, Holland, Denmark, Sweden and Norway, into Russia, Greece, Italy, Spain, England, America and Germany. A really stirring activity has, however, only lately set in, and it began about two years ago when the publication of Forel's writings demonstrated the great importance of hypnotism for therapeutics. Since then upwards of 1,000 books and pamphlets have appeared, and the subject has claimed attention in almost every local medical society, and every National and International Medical Congress.

The hypnotic condition so nearly resembles ordinary sleep that Braid has designated it by its Greek synonym, and Liebault considers the two states as identical. Bernheim frequently mentions this fact: "There is nothing," he says, "by which to differentiate this induced sleep from natural sleep." Moll, however, does not so easily agree to an identification of the states. "I do not think," he says, "that we can make a close comparison between sleep and hypnosis. I think it a misuse of words (to say that hypnotized persons are asleep), since there are a whole series of hypnotic states in which not one symptom of sleep appears, and mistaken conclusions are often drawn from the mistaken terminology, with resulting confusion." That the sleeping is different from the waking state is evident, but as to how different careful study alone can determine. Dreams are due chiefly to nerve stimulation during sleep, that is, they are due to external suggestion. The character of the stimulation

forms some part of the dream plot. Any description of sense-stimulation will result in dreams in which all the senses seem to take part; but as these impressions which contribute to the dream have not been balanced by the faculties, because of the dissociation of the receiving mind from the external world (intimate correspondence between which alone produces the consciousness of reality), there is no coherence, order, and substantiality in our dreams to resemble experience. It is rather of the character of a mirage than of a landscape perspective.

It is said that when the dream is light, the nerve stimulation producing the dream is remembered by the sleeper when he wakes, but that dreams in heavy sleep are not remembered.

These facts, I think, are also present and recognized in hypnosis, with this difference, that, whereas there is a great decrease of self-consciousness in sleep, this self-consciousness is just what remains intact in light hypnosis. In deep hypnosis the case is essentially different. It is characterized by sense delusions which are just the same thing as our ordinary dreams. The opinion that by far the greater number of dreams are induced by sense stimuli gains more and more adherence. This receptivity to stimuli which reach the brain unregulated by the consciousness and mistakenly interpreted, is a phenomenon of both sleep and hypnosis. The method employed to make external suggestion in hypnosis often suffices to induce dreams in sleep. At the most there is only a quantitative difference since most sense delusions are directly suggested in hypnosis, while in sleep dreams are caused as we have seen by some peripheral stimulus which undergoes special elaboration in the brain of the sleeper. As we find that the origin and purport of dreams are the same in sleep and hypnosis, it follows that in all probability the dreams of hypnosis are no more injurious to health than the dreams of sleep. But Rieger and Konrad say that hypnosis is nothing but an artificial madness. Meynert maintains that it is an experimentally produced imbecility. Luys compares it to general paralysis of the insane and others to "melancholia attonita." "These different comparisons," says Moll, "show the want of unanimity among authors, for the forms of mental disorder we call imbecility and mania are as unlike as a pea and a rose, which are both plants, but of utterly different kinds; and no two states of mental disorder could be more unlike than imbecility and mania." Moll in advocating his cause against the charges of these objectors argues as follows: "When hypnosis is thus compared to mental disorder it is generally forgotten that susceptibility to suggestion is the chief phenomenon of hypnosis. But it is a mistake to think that susceptibility to suggestion is an essential phenomenon of mental disorder; if

it were, mental disorders could be cured by suggestion, which is hardly ever possible. By means of suggestion in hypnosis forms of hypnosis may be induced which resemble mental derangement, *i.e.*, spontaneous mania or "melancholia attonita" beside forms of imbecility, etc. But we can also induce paralysis and stammering by suggestion, and yet hypnosis is not a state of paralysis or stammering. We can suggest pain in hypnosis, and yet hypnosis is not a state of pain. And how the light stages of hypnosis in which only certain motor effects are caused by suggestion can be called states of mental disorder is not clear to me, unless a person is to be called mentally unsound simply because he cannot open his eyes. But even the susceptibility to suggestion which exists in such mental disorders as delirium tremens or the kalaniotic of Kahlbaum must not be without further ceremony identified with the susceptibility we find in hypnosis. I need only say "wake" to the hypnotized subject and the state ends; but there is no disease which can be guided and ended at a moment's notice like hypnosis."

A great many objections have been raised against hypnotism as a therapeutic agent. As I have already given Moll's answers to a few of these, I shall let him answer some of the other objections in his own words. He earnestly warns people not to consider hypnosis absolutely safe; others have said the same thing but have somewhat exaggerated the danger. This point he says must be seriously weighed. But it is never asked whether a remedy ought not to be dangerous; we only ask if we cannot avoid the danger by careful and scientific use of it. "What can never do positive harm can never do positive good," is an assertion made by Rust. This is to a great degree justifiable, though perhaps exaggerated. For I think I may say that there are few remedies in medicine which would not injure if carelessly and ignorantly used. There are even medicines which may injure however carefully used, because we do not know exactly under what conditions they become hurtful. I need not speak of morphia, strychnine and belladonna which have sometimes done injury even when the maximum dose was not surpassed. Neither will I speak of the dangers of surgical operations. I need only point out that an apparently harmless medicine may have very likely already done more mischief than hypnotism. Many deaths have resulted from the use of potassium chloride, and unfortunately this drug can still be bought and retailed without a medical prescription. Severe collapse has been observed after the use of antipyrin, antifebrine and exalgine. I will add to these one of the most recent medicines, sulphonal, which is supposed to be a perfectly harmless hypnotic drug. A death from it has recently been published. And

Billroth has lately pointed out great dangers from carbolic acid, which is constantly used. If we gave up the use of these medicines we might give up medicine altogether, as everything employed might do harm. Whether there are dangers in the use of drugs or not is not the question. Rather we must ask, 1. Do we know under what conditions the danger appears? 2. Can we remove these conditions and the consequent danger? 3. If we cannot, does the advantage to be gained by the patient outweigh the danger he runs? The answer to these questions is in favor of hypnotism; we know perfectly under what conditions it is dangerous, which we do not know about some drugs; we are able in certain cases to exclude these conditions by using the proper and harmless methods and thereby preventing danger. But it may be objected that though a short use of hypnotism may not be hurtful, a long one involving a repeated induction of the state might be so. The objection is justifiable. But it might also be made against the use of various drugs, since we do not yet know whether a long use of them might not cause chronic poisoning. Experience is the only way to decide such a question, and Liebau, who has used hypnotism therapeutically for thirty years, has watched cases for a long time without finding any bad consequences.

Among the remaining objections to suggestive therapeutics the assertion that they do not produce any lasting impression or cure may be mentioned. This may be answered as follows: The results are by no means transitory; on the contrary a large number of lasting cures have been observed and published; the author himself having seen many cases where there was no relapse for years. One cannot ask for more. The objection that the improvement may be only temporary is thus not justified. But even were this so we must still rejoice to have found a way of procuring even temporary relief. In any case therapeutics are not yet so far advanced as to give us the right to reject a remedy merely because it only affects symptoms, or has often merely a temporary value. If we were to reject remedies which suppress the phenomena of disease for a time only, we might abandon a large part of therapeutics, perhaps the whole. Besides, from some methods of treatment nothing but a temporary improvement is expected, and yet this temporary improvement is considered to prove the value of the method. Remedies should not be weighed and measured by different standards.

A further objection to treatment by hypnotic suggestion is that there may be suggestions without hypnosis. This is exactly the standpoint which the school of Nancy have always taken up, although it is often difficult to distinguish between hypnosis and suggestion. This is the

heart of the present movement which shows us how extensive is the empirical use of suggestion in therapeutics. It is also the real reason of the strong opposition to hypnotism. We hereby see how often suggestion occurs spontaneously in ordinary life and medical practice. Hypnotism, by means of which we can make suggestions artificially, shows us what a great mistake has been made in estimating previous therapeutics, since we have neglected to consider the mental element in the action of the various drugs. The physiological effect only was regarded; it was quite forgotten that many remedies have only a suggestive value.

Ewald will not concede the same rank to suggestive treatment as to other methods, *e. g.*, electro-therapeutics, treatment by drugs, etc. Forel's reply to him refutes his objections. "Ewald," he says, "protested against the expression *medical treatment by hypnotism*. He said that medical treatment meant the medical art, and medical knowledge, and that every shepherd boy, tailor, and cobbler could hypnotize; only self-confidence would be necessary. I, for my part, think it right to protest against this way of treating a scientific question. Has not medicine drawn a countless number of its remedies from the crudest empiricism, from the traditions of the 'shepherd boys?' Cannot every cobbler inject morphia, apply blisters, and give aperients if he has the material? Yet we do not despise these remedies, nor baths, nor massage, etc. But Prof. Ewald deceives himself greatly if he believes that a delicate agent like hypnosis, which affects and modifies the highest and most refined activities of our minds, could be manipulated by a shepherd, or ought to be handed over to him. Medical science and psychological knowledge, the ability to diagnose and practice, are all necessary to its use. It is true that laymen have succeeded with it, just as charlatans have succeeded, and continue to succeed, in all provinces of medicine. Should we on that account leave the practice of medicine to them? Long enough, much too long, science has left the important phenomena of hypnosis to shepherd boys and their like; it is high time to make up for the delay, and to devote ourselves to a thorough examination of the series of phenomena which can complete our views of psychology and of the physiology of the brain. Medical therapeutics must not remain behind, when great results are to be obtained. But these results can only be obtained by a thorough study of the proper hypnotic methods."

The enthusiasm of the more ardent advocates of hypnotism on the one hand, and the skepticism of its opponents on the other, have left the matter in an uncertain state in the minds of many physicians. The clairvoyance of the mesmerizing mountebanks, the animal magnetism and electrobiology of a host of ignorant quacks, and the

authority of Charcot concerning the transference of thought, the actions of magnets, and of drugs at a distance, have tended to throw discredit on the whole subject. False theories have been elaborated, and the most absurd explanations offered to account for some of the hypnotic phenomena; so that conservative physicians and physiological students who pride themselves on being orthodox scientists, turn away from this new fad and condemn what they cannot understand. Facts, however, are not to be rejected merely because the explanation offered of them proves to be unsatisfactory or even erroneous. But when the actions of the hypnotized patients may be readily explained without appeal to the marvellous, and without doubting the good faith of those who practice hypnotism, it is reasonable to inquire and examine, test and try, in order to ascertain if there is any likelihood of good to result from its use, and if so, to rescue it from incompetent hands, and put it in its proper place in therapeutics.

The word hypnotism seems to me to be incapable of exact definition. It designates all those conditions resembling natural sleep, but artificially produced without the aid of drugs. The methods of hypnotizing are either by uniform sensory stimulation or by suggestion. The easiest way is for the subject to fix his eyes upon some object which is kept near to and a little above him, so that he must converge and turn up his eyes to see it. This means will operate rapidly if the subject is expecting to be sent to sleep. But the hypnotic state may be induced without any sensory stimulation by simply suggesting to the subject that he is about to sleep, and if he is particularly susceptible, it is only necessary to stand in front of him, to look at him fixedly and to say "Sleep."

Many are hypnotized instantly, but some require half an hour or more. The more insusceptible cases need two, three, or even four sittings before they are hypnotized. Some people may be made to pass into the hypnotic state at a specified time after the suggestion. The successful instances reported by Beaunis are where the operator says, "I am going to count ten, when I get to six you will sleep;" or "Count to ten, when you get to eight you will sleep;" or "Go to that door, open it, when you have done so you shall sleep." Bernheim states that those who are easily affected may be hypnotized by writing to them, or by telephone. Those who are very susceptible need only think that they are about to undergo hypnotization, and they will become hypnotized; thus one may say to them, "You will be hypnotized in five hours," and when the time comes, they will pass into the hypnotic state.

There are different degrees of the hypnotic condition, and the school of Charcot and the Nancy school differ radically in their subdivi-

sions. It is difficult, however, to recognize any sharp distinctions, seeing that the degrees of hypnotism are merely according to the depth of the hypnotic sleep. The more simple and common-sense division would be into somnolence or light sleep, hypotaxia, or medium sleep, and somnambulism, or profound sleep. As a general thing, the sleep produced by suggestion, remains the chief measure for bringing the suggestion into complete action. Suggestion produces sleep or slumber; hardly is this present when the suggestibility increases as the result of the sleep, and usually so much the more, the deeper the sleep becomes.

In somnolence or light sleep, the individual is so slightly influenced that by employing all his energy he can resist the suggestion and open his eyes. In hypotaxia he can no longer open his eyes, but is quite conscious of his surroundings, yet he must submit to a part of the suggestions, or to all, with the exception of amnesia. Somnambulism, or deep sleep, is characterized by amnesia after waking, and by post-hypnotic phenomena.

Hypnotic phenomena are of a physical and psychical nature. The light hypnotic influence under suggestion will manifest effects on motility—inability to move, with contraction and automatic movements. It is more decided when it affects the will and causes automatic obedience. In a more intense degree, suggestion produces sleep or an illusion of sleep; and the yet more advanced degrees of suggestion affect the sensorial and sensory spheres, memory and imagination. On waking, the subject may remember nothing that has happened; or he may, if a hint is given to him; or he may easily recollect it all. He usually reacts to impressions that he receives through the senses, which are often very acute, but this reaction is entirely that of an automaton.

Suggestions can be made which shall take effect after waking. These are included in the term post-hypnotic suggestion. One may suggest that the subject on waking shall not see a certain person or thing, or that he shall be able to see the person but not hear him. These instances are examples of what is called a negative hallucination. Post-hypnotic suggestion is chiefly used in the cure of diseases, especially if they are functional, it being suggested to the patient that when he awakes from the hypnotic state he will suffer from none of his previous symptoms. It may be suggested that at some particular time the subject shall do this or that act. This is the suggestion *à échéance*. Beaunis gives an instance of a woman who acted upon a suggestion *à échéance* as long as 172 days after it was made.

Hypnotism produces no effect on the vasomotor system, but by suggestion in hypnotic sleep the strangest phenomena have been reported. Hypnotism increases the rapidity of the respira-

tions, which, however can be diminished by suggestion. Increased susceptibility to suggestion, which hypnotism produces in the patient, gives it its chief claim to recognition as a therapeutic measure.

In short, the patient is an automaton in the hands of his physician. He feels what he is told to feel, his temperature is raised or lowered from one to three degrees F., and his pulse is rendered normal by suggestion. He forgets his troubles by suggestion, and by suggestion he experiences an agreeableness and comfort for which there is no actual physical warranty. Now in the name of all that is good, what else can a physician desire?

I have not said a word about the physiological explanation of hypnotic phenomena, or of the mechanism of suggestion. I leave this to the physiologists, and psychologists, who grace this assembly with their presence, and who are ready to take part in the discussion of hypnotism after I have done with my paper. All that I have briefly put forth here I have gathered from the writings and reports of others. It is a very imperfect presentation of the subject, as might be known by the perusal of anyone of some fifty works on hypnotism, and most of you are acquainted with them all.

(To be concluded.)

CASES OF PENETRATING STAB WOUNDS OF THE ABDOMEN; LAPAROTOMY; RESULTS.

Read at the Meeting of the Mississippi Valley Medical Association, at Louisville, Ky., October 9, 1890.

BY H. C. DALTON, M.D.,
SUPERINTENDENT CITY HOSPITAL, ST. LOUIS.

I report to-day six cases of laparotomy for penetrating stab wounds of the abdomen in which the viscera were injured, one death and five recoveries.

Case 1. Wound of Descending Colon and Ileum; Laparotomy; Recovery.—Edward T., colored, æt. 16, was admitted to the City Hospital July 23, 1890. Two hours previous he was stabbed with a long, narrow-bladed "chicken knife."

The wound of entrance was quite small and situated in the left iliac region, near the free extremity of the twelfth rib. Two inches of omentum protruded. The patient's general condition was excellent; there was but little pain; pulse 62, respiration 23, rectal temperature 100° F. Percussion gave dulness in the left lumbar and iliac regions. The liver dulness was greatly diminished.

After thorough antiseptic precautions, an incision 4 inches long was made in the left linea semilunaris. Considerable blood and fecal matter were found in the cavity. There were two holes in the descending colon and one in the ileum.

The holes were closed by continuous iron-dyed silk sutures, the blood and fæces washed out, and the abdomen closed. A rubber drain was left in the wound. Recovery was uneventful. Patient was discharged well eleven days after admission.

Case 2. Wound of Mesentery; excessive Hæmorrhage; Laparotomy; Recovery.—Nathan B., æt. 29, admitted October 1, 1889, was stabbed an hour before admission, intestines protruding immediately upon receipt of the injury. In this condition he ran four blocks up a high hill with his assailant close upon his heels.

When admitted he was in profound shock, pulse 120 and quite weak, extremities cold; cold perspiration on forehead, temperature subnormal. Examination showed a mass of intestines (ascending colon and small intestine) protruding from a wound in the right hypochondriac region in the axillary line, 3 inches from the costal border. The mass was blue, almost black, and covered with dirt.

After thoroughly washing the intestines the wound was enlarged to the extent of 4 inches. A gash 2 inches long was found in the mesentery. One of the large vessels of the same was cut and bleeding profusely. This was tied, the wound in the mesentery closed with a continuous catgut suture, a large amount of blood washed from the peritoneal cavity, and the wound closed. A glass drainage tube was left in the wound. The temperature rose to 104° F. on the next afternoon, after which his recovery was uninterrupted.

Case 3. Wound of Cæcum; Fæcal Extravasation; Laparotomy; Recovery.—William W., colored, æt. 15, bootblack, admitted October 7, 1889. He was stabbed two hours before admission. His pulse was 80, small and soft; temperature 99.8° F., respiration 24; general condition excellent.

The knife penetrated an inch internal to, and a little above, the right anterior superior spine of ilium. An incision 2 inches in length was made at the site of the wound in the right linea semilunaris. A large ragged hole was found in the cæcum, as well as a considerable amount of blood and fæcal matter in the iliac and pelvic regions. The hole in the gut was closed by interrupted silk sutures, the blood and fæces washed out, and a glass drainage tube, reaching to the bottom of the pelvis, was left in the lower angle of the wound. The patient made a rapid recovery, temperature never going higher than 101° F.

Case 4. Wound of Descending Colon; Laparotomy; Septic Peritonitis; Death.—John W., æt. 27, admitted November 18, 1889. An hour before admission he was stabbed in the left lumbar region. Three inches of omentum protruded. The wound was enlarged sufficiently to allow of the return of the omentum, and an examination with the finger. No visceral wound could be detected by the touch. Patient's general condition was so good (pulse 80, temperature normal, respiration

20), that I was led to believe the intestines were uninjured, hence did not perform laparotomy.

The next morning, fifteen hours after the receipt of the injury, I was mortified to find my patient's abdomen distended, pulse and respiration fast, temperature elevated, and pain great. In fact, septic peritonitis was in full blast. I now did what I should have done at first, *i. e.*, made a free opening in the left linea semilunaris. The intestines were quite inflamed and adherent, blood and fæces surrounded the colon, and a large irregular hole was found in the posterior portion of the latter. This was closed and the abdomen washed out. But it was too late, for my patient never rallied, and died in a few hours from shock and peritonitis—the result of my timid, vacillating, unsurgical policy. Had I boldly opened the abdomen and made an *ocular* inspection, as I have since done in *every* case of penetrating stab wound, I believe a life would have been saved, and your reporter saved from making this humiliating confession.

I have condemned, and still condemn, Senn's hydrogen gas test in gunshot wounds of the abdomen, but in this case I am persuaded it would have been wise to resort to its use, as I believe it would have given affirmative results.

Case 5. Wound of Liver and Stomach; Laparotomy; Recovery.—Dred M., colored, æt. 18, admitted September 1, 1890. Two hours before admission he was stabbed in the abdomen. His condition was good, rectal temperature 100° F., pulse 72, respiration 32. He complained but little of pain.

The wound (a small one) was situated 3 inches above, and 2 inches to the right of, the umbilicus. An incision was made from the ensiform cartilage to the umbilicus. A wound $\frac{3}{4}$ of an inch in length was found on the upper surface of the liver, 2 inches from its lower border. Another wound of similar size was found on the under surface of the liver, separating the organ from a portion of the neck of the gall bladder. A third hole was found in the anterior portion of the stomach, near its pyloric end.

The wound on the upper surface of the liver was closed by a single heavy catgut suture. The suture was introduced $\frac{3}{4}$ of an inch from the wound, passed deeply into the liver substance, and out again $\frac{3}{4}$ of an inch on the opposite side. To close the lower wound a suture had to be passed into the peritoneal coat of the gall-bladder and deep into the liver substance. The hole in the stomach was closed by three interrupted silk sutures. A considerable amount of fluid and dark clotted blood was washed from the belly cavity. In spite of the fact that the apposition was good between the gall-bladder and liver, there was considerable oozing of blood from this point. To control this about 30 inches of gauze, 2 inches wide, was packed around it, the ends of

the strips were left protruding from the upper angle of the median incision. The surgical wound was closed by interrupted silk sutures.

The operation lasted three-quarters of an hour. Two hours after the operation the pulse was 84, rectal temperature 100° F., respiration 26. Little if any shock followed the operation. The gauze was removed on the second day and the drainage hole closed. He was not allowed to swallow water till the fourth day, except occasionally to wet his lips. Water and food were given per rectum. He was given fluid food per orum on the seventh day.

The patient recovered rapidly. His temperature never exceeded 101.4° F.; his pulse-rate was never over 100.

Case 6. Stab Wound of Liver and Intestine; Laparotomy; Recovery.—August F., æt. 21, bartender, was admitted August 21, 1890. He received three penetrating stab wounds an hour and a half before admission to the hospital. One wound was an inch below the costal border, and 4 inches to the left of the median line. Three inches of omentum protruded from this wound. The second was an inch above and 2 inches to the right of the umbilicus. The third was situated in the seventh interspace in the right axillary line. The patient was suffering greatly from shock; temperature subnormal; pulse 100 and weak; respiration 30.

The wound on the left side was enlarged to 3 inches, the omentum returned, and the intestine in the locality examined and found uninjured. The wound to the right of the median line was enlarged and a ragged hole of good size was found in the jejunum. This was closed by four interrupted silk sutures. As there seemed to be no fecal extravasation, and but little blood, I did not wash out the peritoneal cavity, but contented myself with sponging the intestines in the neighborhood of the wound.

By slightly enlarging the thoracic wound I was enabled to determine that the liver was cut. A considerable quantity of dark blood followed the withdrawal of the finger. In order to reach the wound in the liver I resected 4 inches of the seventh rib, and split up the diaphragm 3 inches. This gave me a good view of the hepatic wound. There was considerable hæmorrhage from this point. By introducing a sponge on a long holder I managed to remove a good deal of clotted blood from this locality. The liver wound was an inch in length and about 2 inches deep. This was closed by one deep, heavy catgut suture, care being taken to introduce and withdraw the needle at least $\frac{3}{4}$ of an inch from the margins of the wound. Unless a good portion of the liver is thus involved in the suture, the latter will cut its way through when tied. For this reason, also, care was taken not to continue the tightening of the suture after the margins of the wound were

approximated. The diaphragmatic and cutaneous wounds were closed by continuous catgut sutures. The closure of the wound of the diaphragm was rendered quite difficult in consequence of its movements during respiration. Drainage was not used. The operation lasted an hour and a half.

For three days the patient's pulse-rate remained at about 120, his temperature 102° F., and respiration 30. From this time on his recovery was uninterrupted. There was no peritonitis nor pleurisy. He was discharged well September 20, 1890.

I believe I made a mistake in this case in not making a median incision. I could then have closed the parietal peritoneum on each side, and could have accomplished all I did by the two incisions. By making the latter I doubled his chances for a ventral hernia. I fancy, however, there are few of us who cannot look back after an operation and see where we could have done better.

One point I desire to lay particular stress upon, *i. e.*, that in all penetrating stab wounds it is our bounden duty to go to the *bottom* of such wounds and *see* what damage has been done. It will not do to do as I did in the above fatal case, trust to the introduction of the finger and the *tactus eruditus*. Nor will it do to trust to the patient's general condition, for we have many times seen cases of gunshot and stab wounds with seemingly no perturbation, when in fact the patients were fatally injured.

Should a stab wound penetrate the thorax inferiorly, and in a downward direction, it behooves us to enlarge the wound sufficiently, even if we have to resect a rib, to enable us to determine whether or not the diaphragm has been penetrated. Should such be the case we should open the abdomen as near the site of penetration as possible. In other words, act as we should do when the peritoneum is penetrated through the abdominal wall. With perfect asepsis we can risk a great deal in abdominal operations. I believe it adds but little risk to a case of penetrating stab wound to enlarge it sufficiently to give us an *ocular* inspection of the parts beneath. It will not do to *guess* in such cases.

Since reporting my last cases of stab wounds I have operated eight times in cases in which there were no visceral injuries, all the patients recovering without an untoward symptom.

I would not be willing to place implicit confidence in the Senn gas test in such cases. Having been once deceived by it, I naturally doubt its infallibility.

Up to date I have done twenty-three laparotomies for penetrating stab wounds of the abdomen, with three deaths and twenty recoveries.

STATE PRELIMINARY EXAMINATIONS FOR MEDICAL STUDENTS.—Nearly three hundred persons attended the first State preliminary examinations in New York and Brooklyn this fall.

THE TREATMENT OF ALL FRACTURES OF THE FOREARM, EXCEPT OF THE OLECRANON PROCESS, BY EXTENSION, COUNTER-EXTENSION AND FORCED SUPINATION.

Read at the Annual Meeting of the Mississippi Valley Medical Association, at Louisville, Ky., October, 1890.

BY X. C. SCOTT, M.D.,
OF CLEVELAND, O.

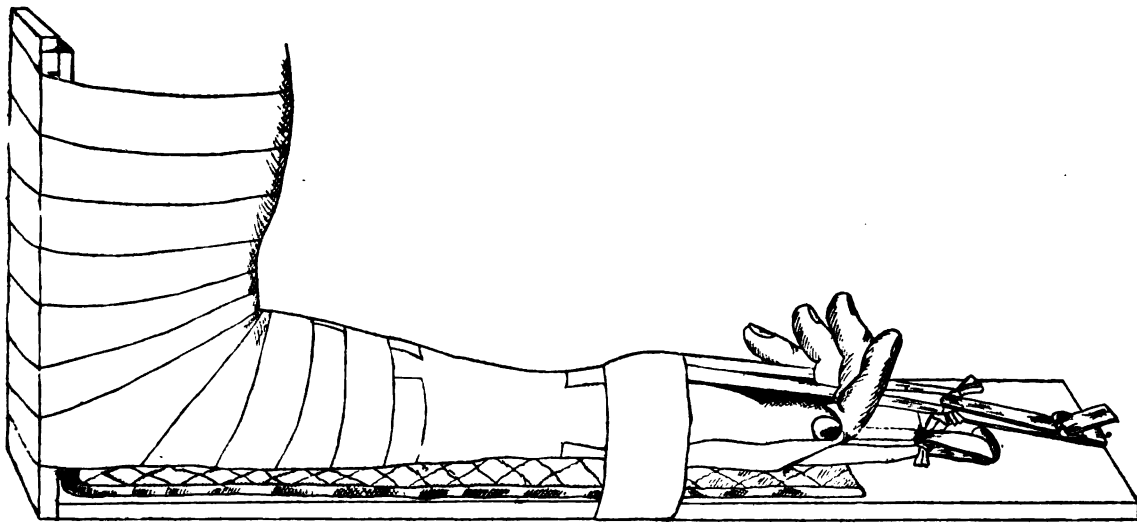
In calling your attention to this mode of treatment I hope to convince you that it is superior to any other method, that you will not condemn it untried as an old doctor friend of mine did, and who said to me, "Doctor, it may be all right, but I do not think it will do because I have not tried it myself." Give it a fair trial and you will be convinced that it can be carried out in a simple manner and that it is better and far superior to any other method, by being adapted to every form of fracture of the forearm, except that of the olecranon process of the ulna.

2. Two strips of adhesive plaster are applied in the same manner to the palmar surface of the hand and tied together.

3. The splint being well padded is applied to the dorsal surface of the arm and forearm. A broad piece of adhesive plaster is applied to the radial side of the forearm above the point of fracture and carried around behind the elbow and splint to the same point on the ulnar side, that it started from on the radial, and fastened. Crossed strips of plaster are also applied to keep the ends of the broad piece in place.

4. Another broad band of adhesive plaster fastens the arm to the upper part of the splint, and in addition I have been accustomed to throw a bandage around this part of arm and splint.

5. After the plaster is well set, the end of a piece of elastic rubber webbing, on the other end of which a buckle is fastened, is passed from the under surface through the opening in the end of the splint through the loops formed by the two strips of adhesive plaster on the dorsal surface of the hand, thence back through the opening in



The splint is made of two pieces of board fastened together securely at right angles. The shorter piece extending up the back of the arm about two-thirds the distance from the elbow to the shoulder, and the longer piece extends along the back of the forearm to four inches beyond the tips of the fingers. These pieces should be one inch wider than the arm and forearm and also well padded. The dressing of the limb is carried out in the following manner:

1. Two strips of strong adhesive plaster are applied longitudinally to the dorsal surface of the hand, commencing at the wrist or higher up, if the fracture is located higher, and extending beyond the tips of the fingers, are tied together at their free ends, forming a loop.

splint and carried forward over the end of splint, and back through the loops formed by the strips of plaster on the palmar surface of the hand, forward towards end of splint; and fastened by the buckle attached to the other end of this elastic band or strap.

The advantage of this procedure is, that should either the dorsal or palmar strips of adhesive plaster become relaxed or loosened, one or the other can be tightened without disturbing or affecting the other.

6. Thus having made extension and counter-extension, supination is easily accomplished by means of a strap of adhesive plaster one and a half inches wide applied to the carpal or bulbar portion of the hand, passing from the radial side

backwards around the splint to the ulnar side and thence to the front of the hand overlapping the place of starting. No other dressing is necessary except in cold weather; it is well to throw a bandage around the limb to protect it from the cold.

In all cases of fracture of the forearm there should be a careful reduction of the broken fragments before the splint is applied. This is especially true in regard to cases of fracture of the lower end of the radius and, in addition, when the fracture occurs at this region of the radius there should be a careful examination in regard to whether the ulnar is dislocated or not, and if found dislocated it should be reduced before any dressing is applied to the limb.

In every case of fracture of the radial shaft or of both bones that I have seen and examined, when they have been treated by either the anterior, or posterior, or both anterior and posterior combined, or pistol-shaped splint in the semi-pronated position, have shown more or less loss of supination, while pronation has not been affected unless there has been an ankylosis between the radius and ulna. The only way that this serious impairment to the rotation of the arm can be prevented is by forced supination of the lower fragment so that its plane may correspond with the supine position of the upper fragment.

Should the fracture occur at any point between the places of insertion of the tensor and quadratus muscles, and when the lower fragment is brought into a supine position, there should not be perfect supination of the upper fragment, it can be remedied by applying a band of adhesive plaster just above the point of fracture in the same manner as before directed to apply it to the hand to bring about supination. Yet in the cases which I have treated this extra piece of plaster has not been necessary.

This question of supination is not new, for it was recognized by Hippocrates and his contemporaries, and by many surgeons since then. Probably Mr. Lonesdale, among modern surgeons, deserves more credit than any other for his researches and calling the attention of the profession to the importance of the supine position in treating fractures of the forearm. It is surprising that modern authors, while recognizing the importance of this position, have not had the courage to come out firmly, condemning any other mode of treatment. Is it because that there are so many imperfect results from the methods of treatment that have been in vogue that they are afraid that they may be in danger of encouraging suits for malpractice? There seems no good reason why any one should cling to any form or method of treatment, which is acknowledged to give, in a majority of cases, impaired motion.

Every surgeon and anatomist recognizes the fact that the radius and ulna are as widely separated in

the supine as in any other position of the two bones, and therefore in as little danger of an ankylosis taking place as if they were dressed or placed in a semi-pronated position.

Some who have not tried this mode of treatment may think that an arm dressed in a supinated position is less comfortable than in semi-pronation. This is a false conclusion—as the writer can testify from a personal experience; nor has he ever heard a patient complain on account of the arm being dressed supine but, on the contrary, in each and every case, the patients have expressed themselves gratified with the ease and comfort experienced from this mode of dressing.

For my own part I have never been able to comprehend why the pistol splint should have been invented or used in cases of fracture of the lower end of the radius, as it forces the hand into a constrained, painful and unnatural position. The surgeons who employ the pistol-shaped splint have deluded themselves into the belief that by forcing the hand into this constrained position, that they are enabled to elevate the upper end of the fragment. They appear to forget the important fact that in fractures of the lower end of the radius, that there is always more or less dislocation of the ulna and laceration of the radio-ulnar and other ligaments at the wrist-joint, so that there is no means or fulcrum by which the necessary force can be applied to accomplish their object. The man who first used the pistol-shaped splint must have been studying the times of the Inquisition to have found such a relic of barbarity. The sooner it is abandoned in practice the better it would be for humanity. It is a false assumption that by means of the anterior-posterior splints, the radius and ulna can be forced apart, unless so much pressure is made that it will impair the circulation and jeopardize the vitality of the parts; moreover, only the slightest pressure on the wrist can be tolerated for any length of time.

Another serious objection to both the anterior-posterior and pistol splints, is that the forearm is completely enveloped with bandages, and the condition of the fracture and limb cannot be examined, at any time, without removing all dressings and splints. Neither of these two kinds of splints are applicable to cases of fracture of both bones nor to cases of compound fractures where drainage is necessary. I question whether there ever has been a case of fracture of the shafts of both radius and ulna, treated by the anterior-posterior splints, that has recovered without more or less deformity and loss of motility, especially supination.

The broad angular splint and mode of dressing to which attention is called, allows an inspection of the broken limb at all times without removing the dressings or splint, and by making the neces-

sary opening in the splint affords the means for perfect drainage in cases of compound fractures. Dressed in this manner the fragments, in cases where both bones are broken, would be supinated and extended by the extension and counter-extension so that there would be no shortening caused by the overlapping of the broken ends, nor loss of supination from the upper fragments being supinated while the lower fragments are semi-pronated. If this angular splint is used, it will be impossible for any deviation of the fragments from any improper pressure of the sling in which the limb is carried, for the splint being made longer and wider than the arm and hand, the extension and counter-extension keeps the broken bone or bones fixed fast between two fixed splints, so that they cannot sag either towards the radial or the ulnar side of the splint, and thus receive any pressure from the sling on the hand or the shaft of the bone which will be detrimental.

It is easily understood, that when one or both bones are broken, and there is a tendency for the broken ends to crowd together, there is no means so efficacious for their separation as extension and counter-extension acting through the stretched muscles and connecting tissue by which the muscles attached to the bones, will draw the fractured ends apart, better than can be obtained from pressure by compresses, even when carried to such a degree that it is dangerous to the vitality of the limb. This is equally true in those cases of fracture of the lower end of the radius when it has been supposed that the upper end of the lower fragment will be drawn towards the ulna by the quadratus muscle. Whether this deviation can take place I question, for there is no interosseous space between the two bones at this place, so that such a deviation seems impossible, but granting that it does take place there are any means which will so well and effectually overcome it as extension and counter-extension and forced supination acting through and assisted by the stretched muscles, tendons and connective areola tissues surrounding the parts involved.

It is a well known fact, that with the ordinary way of treating Colles' and other fractures and injuries of the wrist-joint, there often remains in many cases, for a long time, if not permanent, more or less swelling, commencing at the upper margin of the annular ligament and extending upwards, caused by an effusion of lymph into the sheaths of the tendons and the areolar tissue around them. The ankylosis and permanent impairment of the wrist-joint, and in the use of the fingers, which frequently follows, can be prevented if treated as I have suggested in this paper; for passive motion can be made of the fingers and tendons from the time of the accident and the condition of the injured parts can be inspected daily, so that if the effusion of lymph and

swelling becomes too great, application of remedies, which favor absorption, can be made without disturbing the dressings or splint.

Finally, what are the advantages claimed for this mode of treatment?

1. It is suitable to every form of fracture of the forearm, whether of one or both bones, either simple or compound, except that of the olecranon process of the ulna.

2. The apparatus is simple in construction and easy to apply.

3. It is more rational and meets all indications better than any other splint or form of dressing.

4. It meets and overcomes that impairment of motion, so frequently met with by surgeons, in fractures of the radius or radius and ulna, *i. e.*, loss of supination while pronation remains intact.

5. Because with its employment, passive motion can be commenced from the time of the accident and thus afford the best means of preventing ankylosis and stiffening caused by effusion into the sheaths of the tendons, impairing the usefulness of the wrist, hand and fingers.

6. The condition of the injured limb or fracture can be examined at all times, and, if desirable, local applications can be made of remedies which combat inflammation and favor the absorption of any exudation that may have taken place, without disturbing the dressing or apparatus.

7. The same splint and dressing can be used with equal benefit in all cases of dislocations or injuries at or of the wrist-joint.

I believe that I was the first, in my inaugural thesis (College Physicians and Surgeons, Medical Department of Columbia College, New York) in March, 1869, to call attention to the importance of treating fractures of the forearm by extension, counter-extension and forced supination. In the same year Mr. Frank Hamilton's attention was called to the use of this splint and mode of treatment. Since 1870, in all editions of his great work on "Fractures and Dislocations," a woodcut is displayed of the apparatus as applied to the forearm, and most honorable mention is made of it, both in the chapters on fractures of the radius and of both radius and ulna.

In Stimson's work on "Fractures," page 442, the same woodcut is displayed, evidently copied from Hamilton's work, and it is the only splint shown for the treatment of fractures of the shafts of both bones; yet, in reading his reference to it, although commendatory, I am compelled to say that this excellent author does not seem to comprehend the great and important principles in its use or application.

127 Euclid avenue.

A FRESH outbreak of influenza is reported from Copenhagen. Between Oct. 5 and 11 the number of cases known to have occurred was 34.

THE CLINIC.

REMOVAL OF A DERMOID CYST.

A Clinical Lecture, delivered at the Hospital of the University of Pennsylvania, October 8, 1890.

• BY WILLIAM GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY.

[Reported by LEWIS H. ADLER, JR., M.D., Resident Physician of the Episcopal Hospital; Late Resident Physician of the University Hospital.]

This woman is 22 years old; she appears to be quite strong and healthy-looking, but such is not the case. Her menstrual periods, for over four years, have been accompanied with a considerable amount of pain, and for the last eight months she has been practically a cripple. I have ascertained her trouble to be a tumor, about the size of an orange, situated in the ovarian region of the right side of her abdomen. This tumor seems to be adherent from every direction. She has been already under the care of many physicians, and has taken medicine of various kinds, but without any permanent improvement or alleviation of her severe suffering.

There has been some suspicion of venereal trouble; but in spite of our treatment, based upon this hypothesis, her symptoms have been growing worse and worse, and her pain more and more severe. The apparently large number of adhesions already noted as existing in this case would lead me to suspect a previous history of peritonitis, but I have been unable to elicit such an account.

Some years ago I would have hesitated to operate, in the manner proposed in this case, before such a large number of students, for fear of poisonous germs in the atmosphere, that might set up an inflammation and be deleterious to the patient. In addition to this tact, a few years ago I would have been afraid to operate upon a patient who was menstruating, lest there might be some germs present to induce sepsis. But now the dangers in both of these instances have been greatly lessened by the introduction of antiseptics, so that modern surgeons are highly gratified at the success that they have obtained with the proper observance of antiseptic precautions, even in the most crowded lecture-rooms.

In reference to an operation of election, I should always prefer to select a time when the patient is between her periods of menstruation; mainly on account of æsthetic reasons; for the danger formerly involved in operation performed during, or about, the menstrual period, is now considerably lessened under the new *régime* of treatment. Some surgeons go so far as to say that the danger is entirely annulled, and that you can operate as well at one time as another; but, in my opinion, this is carrying the matter a little too far, when hysterectomy is concerned.

The two great secrets of success in abdominal

surgery are excessive cleanliness and deliberate care in the breaking up of adhesions. Sometimes, out of respect for public opinion, I use carbolic acid as a disinfectant (1 to 40 solution), but hot air and boiling water are the best germicides.

The patient before us has been carefully prepared for operation—the abdomen scrubbed and a vaginal douche of bichloride of mercury, 1 to 2,000, used; the bladder emptied and the pubic region shaved. It was formerly my custom to shave this region on the day preceding the operation; but as this needlessly alarmed the patient, I now defer it, as in this instance, until after the anæsthetic has been administered.

Everything being in readiness, the instruments immersed in boiling water, in which is a solution of carbolic acid; my hands and the hands of my assistants being chemically clean; I rewash the abdomen with a 1 to 1,000 solution of corrosive sublimate and, standing upon the right side of the patient, begin the operation by an incision in the median line of the abdomen. First, however, I estimate the thickness of the skin, so that I shall know exactly how deep down to cut, lest I should enter the peritoneal cavity. In making my incision, I am careful to direct it along the track of the conjoined tendon of the belly of the internal oblique and transversalis muscles, so that they will reunite without difficulty.

Having now cut through the skin, muscles and fasciæ, I come to the peritoneum, which latter lies behind the recti muscles, separated by a celluloadipose tissue. Before opening the peritoneum, the hæmorrhage incurred thus far is checked with catch forceps. While I am tying the vessels, I also have time for the woman to get over her present attack of vomiting; judging from the persistence of this symptom, I fear she has had something to eat since this morning. The danger of any food being taken shortly before an operation is that there may be large masses of food in the stomach, which, during the etherization, may be vomited up and drawn into the larynx, producing suffocation; or, if the incision in the abdominal wall be a large one, there is a possibility of some of the intestines being forced through the opening.

All possible antiseptic precautions having been taken thus far, and all the bleeding vessels secured, I now divide the præperitoneal fat—which is here thicker than usual—and then seize hold of the peritoneum with two forceps, raise it up and nick it. The tumor is to the left side of the abdomen and behind the uterus. For this reason I am obliged to make the incision longer than is ordinary. Accordingly, I push the omentum aside and then proceed to empty the cyst, first taking the precaution to immerse the end of the aspirator in a 1 to 2,000 solution of the bichloride of mercury.

I now examine all of my instruments, in order to be certain as to their number and condition. As a general rule, little tumors are rather harder to operate upon than larger ones, for the reason that the working room is less.

The present tumor looks like a rare form of growth, called a dermoid cyst. Its contents are curious, and are very irritating to the lining membrane of the abdominal cavity; for this latter reason the greatest care has to be exercised in order to prevent infection of the abdominal cavity, and a consequent septic peritonitis. I shall keep the contents of this cyst for a further examination, as it is a very pretty example of this kind of a growth. It contains a small plate of calcareous matter, some light hairs, a nipple like that of the mammary gland, and some white cheesy-like substance, the exact nature of which I shall not be able to declare until it is examined microscopically.

This tumor is rather more difficult to remove than is the case in the ordinary run of similar operations, for the reason that it has a short and broad pedicle. Before cutting away the tumor I shall tie the pedicle with a provisional slip-knot.

We now ask ourselves: What are dermoid cysts? This is a question in regard to which pathologists have not yet become satisfied. We generally find in them hairs—most commonly of a light color, and teeth. We sometimes find in them bone fragments; but the most common constituents are hairs, teeth, and cheesy material such as comes from sebaceous glands, viz.: skin products, and it is for this reason that these curious growths are called *dermoid* cysts—in other words, skin-like tumors.

For a long time they were explained by what I call the "blasted theory"—partly because I cannot understand it, and partly because it contends that the epiblastic portions of an ovum, which form the skin, hair and teeth, become misplaced by dipping down into the hypoblast and becoming mixed up with other embryonic cells. Dermoid cysts are sometimes found in the testicles, but more commonly in the ovary, so that the theory is now gaining ground that they are, as a rule, developed from some addled human eggs; and it is no longer considered necessary, as it once was, that an ovum should have been fructified by the spermatozoa, in order for it to become the basis of a dermoid cyst.

Another theory once in vogue, was that of parthenogenesis, or virgin birth; that is to say, imperfect effort at transmitted fertility—a property peculiar to many insects—the aphidæ, for instance—one copulation being sufficient to keep up fructification for several generations of descendants. Let me here take the opportunity, while I am on this subject, to correct the statement I made in the beginning of my lecture, that this trouble in the case before us, was probably

of specific origin, as this tumor abundantly explains all the symptoms, without an appeal to syphilis.

Let me also repeat what I said in the beginning of my lecture in regard to these cysts containing irritating substances and, therefore, more or less poisonous to the peritoneal cavity, the practical lesson from this being that when you are removing a tumor, and have even a suspicion that it is a dermoid cyst, you should take the greatest precautions, by the introduction of antiseptic sponges beneath and around it, to prevent the possibility of any of its contents escaping into the peritoneal cavity, wherein they will certainly induce a dangerous, not to say disastrous inflammation.

Having now counted the instruments and the sponges and removed the cyst, the pedicle of which I have tied with a carbolated silk ligature, passed through the centre of the stalk and tied upon either side, I am ready to close the abdominal walls. First, however, the abdominal cavity must be thoroughly cleansed, particularly in Douglas' pouch and in the peritoneal fold between the bladder and the womb, as otherwise peritonitis or septicæmia may follow. After this is done a large flat sponge is placed over the intestines, under the wound, in order to catch the blood that issues from the suture tracks. Each suture is double-threaded—that is to say, has a needle upon each end, which allows its being passed from within outward. Each needle is inserted about $\frac{1}{4}$ of an inch away from the edge of the wound, and I am careful to include in the sutures all the layers of the parietes, in order to avoid ventral hernia.

In this instance, I shall not use a drainage tube; these instruments are indicated in cases where cysts break during removal, in cases of serious adhesions, of old women with lowered vitality, or in septicæmia, and are always to be removed generally in from twenty-four to forty-eight hours, when the serum discharged is no longer bloody, but pink or straw-colored.

All the sutures having been inserted, the flat sponge previously mentioned is removed, and the abdomen reexamined to see if any oozing has occurred; all being found dry, I now count the sponges and instruments again, in order to make sure that none are left behind within the cavity of the abdomen—finding the count correct, I catch in the hand all the sutures on my side, and my assistant does the same upon the opposite side. The edges of the wound are brought firmly together, and, at the same time, all the air is expelled from the abdominal cavity. Each suture is now tied by means of the surgeon's knot. As the abdominal walls are fat and thick, there is some eversion of the outside edges of the wound, so that I shall be obliged to insert a few additional superficial stitches, in order to hold the upper parts of the wound together; for, if we are

careful to get like parts in apposition—the skin connected with the skin, and the fasciæ with the fasciæ—we shall get union by the first intention; otherwise, if this precaution be not taken, the union will be by granulation.

The entire wound being closed, the ends of the sutures are gathered together in one hand and cut off several inches from the knots. I now proceed to dress the case with my favorite dressing, which consists of:

1. Powdered iodoform sprinkled over the surface of the abdomen, particularly into the umbilicus.
2. Sublimated cotton.
3. Broad adhesive strips of rubber plaster to hold the previous dressing in place.
4. A wide flannel binder, smoothly pinned with safety pins.

To-morrow at 1 o'clock, or within twenty-four hours, the patient is to have a cup of tea, and she will consider this the best cup of tea that she has ever tasted in her whole life. If she suffers in the meantime from collapse, she is to have sips of whisky. If she has excessive thirst, she will have enemata of beef-tea.

I trust that she will be able to get along without any opiate, because opium has the effect of stopping the bowels and the other emunctories; but, if she suffers very much, she is to have a hypodermatic injection of morphine.

After getting the tea to-morrow, she is to receive for the first few hours a dessertspoonful of milk, which is to be administered every hour; and, if it be well received, she will by nightfall be able to take one tablespoonful every hour for several hours, and then two tablespoonfuls every two hours. This quantity is to be gradually increased, so that by the end of the third day she will be getting during the twenty-four hours as much milk as she can retain and readily digest.

As I mentioned previously, she is to receive no opium, unless it is absolutely necessary to relieve pain, because it has the tendency to stop the bowels; moreover, though it was once considered necessary after these abdominal operations to keep the bowels closed for a week or more, such an opinion is no longer in vogue among medical men.

The bowels are to be moved on the second or third day, and the greatest precautions are to be taken in order to prevent any constipation in this case. She is to be urged not to hesitate to pass her wind, no matter who may be present at the time, lest the distended bowels exert a pressure upon the region of the wound and set up a peritonitis. If she does fill with wind, let the bowels be moved on the second day. For this purpose, I generally order a Seidlitz powder, adding to the contents of the blue paper a dessertspoonful of Rochelle salt. If she vomits, she is to receive large doses of calomel, for the reason that this medicine is heavy and not liable to be vomited. I give as much as 10 or 20 grs. at once and repeat it until bowels

are moved, having given as much as 75 grs. during the twenty-four hours, feeling sure that, at least, a part of this heavy substance must have been kept down, however violent the vomiting may have been.

If the flatus be low down in the intestines and reachable, it is sometimes removed by the introduction into the rectum, or even higher when necessary—into the sigmoid flexure of the colon—of a flexible catheter. In any case, should tympanites or septicæmia become evident, let the bowels be moved. This latter condition is shown by peritonitis, by the pulse rising above 120, and the temperature going above 102° F., when ice is to be applied to the head.

Should obstinate vomiting occur, ice will be given or sinapisms applied to the epigastrium.

As a rule, it is necessary to catheterize for a day or so after these operations, but it is to be avoided as much as possible, as the too frequent use of that instrument is likely to cause an irritable bladder that is not easily amenable to treatment.

From a week to eight or nine days, the primary dressing will be ready to be removed and the stitches taken out.

MEDICAL PROGRESS.

STRYCHNINE IN THE TREATMENT OF WEAK HEART.—I have derived very great benefit in the treatment of weak heart from the administration of strychnine in gradually-increasing doses. I usually begin with a prescription consisting of 1 grain of the sulphate of strychnine to 1 ounce of dilute phosphoric acid, and of this I give the first day 10 drops three times, the next day 11 drops three times, and so on, increasing the doses a drop each day until some indication of the physiological action of the drug is obtained. This usually consists of a slight rigidity of the muscles of the neck or calves of the legs. The administration is then stopped for a day or two, and then resumed as before. This process may be continued as long as appears necessary. I am quite sure that I have frequently succeeded in giving tone to weak hearts when even digitalis has failed to produce permanently beneficial results.

Within the last few years I have made great use of cocaine as a heart tonic. So far as I know the first published account of its efficacy in this direction was made by Dr. Beverley Robinson, of New York, but I had employed it, for the purpose of giving tone to the heart, several years before his observations were made known. Its action in this respect is readily perceived by the stethoscope, the sphygmograph, and by feeling the

pulse. Moreover, its influence is markedly shown in the ability which it gives the patient to take increased exercise without suffering from dyspnoea or inordinate cardiac action. I usually begin its administration with a dose of $\frac{1}{2}$ of a grain three times a day, and gradually increase this in the course of a month up to 1 grain. It is well, I think, to give it in combination with wine, although this is by no means necessary. I employ for this purpose the so-called restorative wine of coca, which consists of 2 grains of the hydrochlorate of cocaine to the pint of Malaga wine. A wineglassful contains $\frac{1}{2}$ of a grain of cocaine. After this quantity is taken for two or three days, I have the patient add a powder of $\frac{1}{2}$ of a grain to each dose, and so on until the total quantity amounts to a grain. In some cases it is not advisable to increase the dose. Cocaine, more than any other medicine with which I am acquainted, appears to possess the property of exhibiting its effects without any augmentation of the dose, and in such instances the original quantity may be continued indefinitely without deleterious effects. On the contrary, usually with marked beneficial results.—W. A. Hammond, *Therapeutical Gazette*.

THE ETIOLOGY AND TREATMENT OF TETANUS.—At a recent meeting of the Academy of Medicine M. NOCARD read a paper by M. PEYRAUD on this subject. M. Peyraud, having inoculated a number of rabbits with an infusion which he made from hay, says he was able by this means to bring on an attack of tetanus in 50 per cent. of the animals inoculated. The animals thus inoculated succumbed in the proportion of five out of every six. M. Peyraud has a theory that a chemical substance capable of exciting symptoms analogous to those caused by the invasion of the system by a given microorganism will prove by inoculation to be a vaccine against the ravages of the microbe. He has applied this theory to strychnine, considered as the vaccine against tetanus. His method of proceeding was as follows: He injected hypodermically for a period of five or six days a dose of strychnine, varying the dose according to the size of the animal and the appearance of the convulsions. The animals being thus prepared, he inoculated them with pus obtained from an animal previously dead of tetanus. Ten of such rabbits were inoculated; but, in addition to these ten already prepared, he inoculated, as a controlling experiment, four others not previously protected by strychnine vaccination. The whole four non-vaccinated ones died and three of the ten vaccinated. The death of three of the prepared animals was attributed to a supplementary injection of strychnine which proved too strong. M. Nocard repeated these experiments by following a somewhat different method. He prepared a pure culture of

tetanic bacilli from a lamb. Then he took ten rabbits and injected under the skin of each, for five days in succession, ten drops of a solution of sulphate of strychnine of the strength of 1 in 1000. He next inoculated the ten with his bacillary culture, controlling the experiment by at the same time inoculating ten untouched rabbits with the same culture. The result, however, was that they all died in from three to five days. He repeated the experiment with slight modifications, but the result was not less disastrous. The conclusion, therefore, was obvious.—Paris Correspondence, *The Lancet*.

BLOODLESS TONSILLOTOMY.—PROFESSOR J. TOISON, of Lille (*Rev. de Thér. Méd. Chir.*, October 1), discusses the various methods of reducing or removing enlarged tonsils. He begins by saying that excision of the tonsils with the bistoury or the guillotine is gradually losing favor among surgeons on account of the risk of hæmorrhage. Ignipuncture with the thermo-cautery or the galvano-cautery is often useful, but should be reserved for cases in which the tonsils are only moderately enlarged and can be sufficiently reduced in one or two sittings, and for cases in which some anomaly of shape in the hypertrophied glands makes it difficult to remove them with a cutting instrument. For ordinary cases, Professor Toison uses a new snare of his own invention, which, according to him, effectually obviates all danger of bleeding. The apparatus consists of a *serre-nœud*, the metallic loop of which, instead of being free, is fixed by three silk threads to a blunt ring fixed to the distal end of the instrument. The ring is passed over the tonsil, which is then seized with forceps; the wire loop is next pulled home in the usual way, the traction being sufficient to snap the silk threads which fix it temporarily to the ring. The tonsil is thus cut through without bleeding. Professor Toison has performed this operation several times since last April; in no case has there been any hæmorrhage.—*Brit. Med. Jour.*

MERCURY DURING ALBUMINURIA.—The question as to whether mercury is likely to be injurious in cases in which albumen is present in the urine, is one of much importance to the surgeon as well as the physician. Many surgical complications occur to patients who are the subjects of chronic renal disease, and conditions are often presented in which, were there not a prejudice against it, mercury would seem to be desirable. I have myself chiefly been concerned with this dilemma in cases of syphilis, and have long been in the habit of prescribing mercury without much regard to the state of urine. Nor have I ever seen reason to regret doing so. The following quotation from a Report on Medicine by the late Dr. Prichard, of Bristol (1835), is not without its

interest in reference to this question. Dr. Prichard refers to cases in which dropsy was the condition requiring treatment.

"It seems to have been the opinion of Dr. Bright, and the observation was strenuously enforced by Dr. Blackall, that mercury is injurious in all cases of this description. I shall take the liberty to state that this question has been brought to the test of experiment, during several years, at the Bristol Infirmary. In numerous cases of dropsy, with albuminous urine, the treatment advised by Dr. Blackall has been fully tried, and it has failed to produce a cure; but the same cases terminated in recovery under a moderate use of mercurial remedies."—Mr. Jonathan Hutchinson in *Archives of Surgery*.

VAGINAL HYSTERECTOMY FOR CANCER.—FLAISCHLER (*Deutsche med. Wochenschrift*, No. 29, 1890) reports twenty cases of total extirpation operated upon in the past five years, with three deaths from sepsis. Seven patients had since died from the disease, and eleven had no recurrence, of whom six had been operated upon at least three years before. He insists upon greater care in the selection of cases, not so much because of the immediate as of the remote results of the operation. Only those are suitable for the radical operation in which there is strong probability that the cure will be permanent. It is not justifiable to remove every uterus which can be easily drawn downward when there is suspicious induration in the broad ligaments. Sometimes it is impossible to determine positively, even under ether, whether the perimetrial tissues are involved or not, or to decide between malignant and simple inflammatory indurations in the broad ligaments. Under these circumstances it is better to give the patient the benefit of the doubt.

According to Volkmann, a patient can only be regarded as cured when three years have elapsed after the operation without recurrence, while Fritsch places the limit at six years. Tanner believes that while a patient may be said to be cured, it is only a question of a few or many years before the disease returns. Fleischler regards the latter view as too pessimistic, although sufficient evidence has not yet been accumulated to decide positively against it. He thinks that the total extirpation is no more dangerous than high amputation (!); the latter operation should be regarded as a transitional step in the development of the former, and is not to be compared with it.—*Am. Jour. Med. Sciences*.

EFFECT OF CERTAIN SUBSTANCES ON THE RED CORPUSCLES.—M. MAYET, of Lyons, read an interesting paper at the recent meeting of the French Association for the Advancement of Science, in which he gave an account of the effects of various neutral salts and of chloral on

the red corpuscles of the blood. Solutions of the strength of 1 or 2 per cent. of chloride of sodium, chloride of potassium, sulphate of soda, phosphate of soda, bicarbonate of soda, and sulphate of magnesia all at first temporarily destroy the elasticity of the corpuscles and then dissolve or disintegrate the stroma. Solutions of the strength of 5 per cent. or more diminish the size of the corpuscles and harden them. The chloride of sodium has the most preservative primary action, but is most destructive on prolonged contact. As is well known, it has been recommended for washing the blood (in a 0.6 per cent. solution) in certain cases of poisoning. Sulphate of soda has a great tendency to preserve the chemical properties of the corpuscles, but makes them much more rigid than does chloride of sodium. It is not suited for intravenous injections, but is very useful in the laboratory for washing the corpuscles before preparing hæmoglobin from them. For this purpose it is better than the 3 per cent. solution of chloride of sodium, which is commonly employed, but which has a considerable tendency to dissolve the corpuscles. Chloride of potassium has a great preservative action, but cannot be used for intravenous injections owing to its toxicity. Carbonate of soda in weak solutions is very preservative. Phosphate of soda in weak solutions renders the corpuscles rigid for a long time; it preserves their form well, and so is useful in diluting the blood for the purpose of counting the corpuscles. Sulphate of magnesia does not dissolve them, but changes their shape more than any of the other salts. Hydrate of chloral is very destructive to the corpuscles when it is in a concentrated solution, but not when it is of less strength than 5 per cent. Intravenous injections of the latter, which may be repeated several times daily, are very valuable in tetanus, in uræmic convulsions, to calm the violent spasmodic attacks in rabies, and in some painful diseases where hypodermic injections of morphia are inefficacious or badly borne. Of course the effects on the heart, respiration, and urine must be carefully watched.—*The Lancet*.

ANTISEPSIS IN GYNECOLOGY AND MIDWIFERY.—DR. AUWARD (*Arch. de Tocologie*, August, 1890) describes his method of insuring clean instruments and preventing them from fouling when packed in their cases and boxes. The handles of the knives are of the same metal as the knives themselves; glass is avoided as much as possible, since it is less easy to disinfect than metal. Friction of instruments, after use, with emery powder is purely æsthetic. Soaping and brushing is necessary to wash off visible impurities, but the process does not destroy germs. Immersion in antiseptic fluids not strong enough to damage the metal is good, but not absolutely efficacious. Catheters and forceps may be thoroughly disin-

fectured by fire, the instrument, well cleaned, being passed through the flame of a spirit lamp, or else a few drops of spirit may be poured into the metal box in which the instruments are packed. The flame must be applied for about a minute to the instrument. Boiling water is easily procured, and is good for knives, etc., which it does not spoil, but it tarnishes steel and nickel. The most perfect method, however, of rendering these delicate instruments aseptic, is the stove. The *autoclave*, or compressed vapor stove, is not so good as a dry-heat stove like Poupinel's. The instruments, laid out in a metal box, should be left for half an hour in the stove at a temperature of 150° C., being 50° C. above boiling point. Dr. Auward finds that a high temperature blunts the knives. Strong antiseptic solutions alone avail for India-rubber and glass tubes. Obstetric and gynecological cases made of leather should not be constructed so that the instruments are fixed in straps against the leather. The instruments should be rolled up in a calico or longcloth sheet, which must be washed at least once a fortnight.—*Brit. Med. Journal*.

IDENTITY OF HUMAN AND ANIMAL DIPHTHERIA.—In support of this proposition, M. DELTHIL points out that diphtheria may be met with in many different animals with symptoms almost identical. The bacillus of the disease in man, when inoculated on animals, multiplies with rapidity; and the disease itself may be retransmitted to man with its original characters. From these facts, and from the history of the disease, M. Delthil concludes it is identical in man and animals. He records thirteen personal observations, and cites in addition several facts noted by different observers, all of which go to show that the transmission of diphtheria from animals, and especially from birds, to man has taken place under circumstances often diverse and little thought of. In conclusion, he urges that if the identity and transmissibility of human and animal diphtheria are admitted, it follows that stables, poultry-yards, dovecots, etc., are very likely to contain the germs of the disease, and to favor in consequence its spread. He therefore urges the necessity for a thorough and constant inspection of all markets, poultry-yards, and dwellings where domestic animals and fowls may be kept, and he points out that the initiative in this respect has already been taken in Germany, Italy and Switzerland.—*The Lancet*.

THE USE OF BROMOFORM.—In the *Medical Record* for September 6, 1890, DR. LOUIS FISCHER reports sixteen cases of children treated in the German Polyclinic of New York, the majority of whom were, as a rule, poorly nourished subjects, living in tenements in badly ventilated rooms, and in all respects under the least favorable con-

ditions of hygiene. In all of these cases, nevertheless, the most marked improvement and rapid cure is said to have followed the use of bromoform. The doses which he administered were the following:

For children under and up to 1 year of age, 2 to 3 drops three times a day. Children from 2 to 4 years of age, 3 to 4 drops three or four times a day, depending upon the severity of the case. Children up to 8 years of age, 4 to 6 drops three or four times a day. The doses were usually increased on the third day, and in very severe cases on the second, by adding 1 drop to a single dose. The time required for a cure was variable, in some cases ten days being enough to effect a cure, while others required almost four weeks.

This remedy may be given in a small teaspoonful of water; but as, from its weight, it sinks to the bottom of the spoon, care must be taken to see that the child swallows the bromoform and that it does not remain in the spoon. As a rule, no difficulty will be experienced in giving it to children, as bromoform has a pleasant taste and is readily taken. If the bromoform turns brown, it contains free bromine, and should then not be administered.—*Therapeutic Gazette*.

STRYCHNINE AS AN ANTITETANIC VACCINE.—DR. PEYRAUD (*Bull. de l'Acad. de Médecine*, No. 40, Oct. 7, 1890) gives an account of some experiments carried out with soil taken from a covered in enclosure in which wine was stored, and in which no horses had entered within the memory of the inhabitants, and which had not in any way been cultivated since the store was erected. Dust from forage when inoculated induces tetanus in 50 per cent. of the animals experimented on, but soil taken from this wine store induced tetanus in 100 per cent., five out of every six of the animals inoculated dying. Having obtained this virulent material, Dr. Peyraud carried out a series of experiments to test his theory that strychnine, which produces many of the symptoms of tetanus, would probably act as a vaccine; he, therefore, injected 0.5 milligram of strychnine in solution every day for five days. Ten rabbits so vaccinated and four test rabbits were inoculated with a small portion of tissue from near the wound in an animal in which tetanus had been produced experimentally, and the wounds were carefully closed. Of the fourteen animals the four test rabbits, and three of those vaccinated, died. In a second series of experiments, seven prepared rabbits and fourteen test rabbits were inoculated with tetanic virus six days after the strychnine inoculation had been stopped; thirteen of the test animals and four of the prepared animals died.

MM. Verneuil, Trasbot and Nocard were appointed as a committee to test the accuracy of such an important statement, but unfortunately, they were unable to obtain as good results as Dr.

Peyraud had recorded. They found that the soil was undoubtedly capable of producing tetanus in a certain proportion of rabbits, but in their hands this proportion was only 11 per cent., whilst as regards preventive inoculation, 0.6 of a milligram of sulphate of strychnine injected daily for five days did not protect a single one of eight rabbits against the action of a pure cultivation of the bacillus of tetanus. They were killed as rapidly and with the same symptoms as eight test rabbits. All died in from three to five days. Thinking that the dose of strychnine might be too small, they gave to ten rabbits 1 milligram of sulphate of strychnine; one of the animals died. The next day they injected 0.9 of a milligram, and another of the animals died; the third day, 0.8 of a milligram, and only two or three of the animals showed symptoms of strychnine poisoning. On the fourth and fifth days the same dose was administered to the remaining eight rabbits. On the sixth day, the eight prepared rabbits and four test rabbits received 10 drops of a pure culture of the bacillus of tetanus, with the result that the whole twelve were dead at the end of five days, and the reporters conclude that, although an important fact has been demonstrated by M. Peyraud as regards the presence of the tetanus bacillus in non-cultivated and undisturbed soil, his experiments on preventive inoculation with strychnine against tetanus are vitiated by some important fallacy, as the committee were unable to obtain the same results.—*Brit. Med. Journal*.

RECENT HYPNOTICS.—DR. H. DEHIO (*Petersburg med. Wochenschr.*, No. 33, 1890), gives the result of trials of various hypnotics in the Dorpat Clinic for Nervous and Mental Diseases. Hypnone in doses of 10 to 15 drops was useless, and methylal and chloralamide were found of little use in the few cases in which they were tried. Paraldehyde was and remains the most reliable hypnotic used in the clinic. In severe cases a dose of 5 to 6 grams was followed by another of 3 to 4 grams; this was found sufficient to give a night's rest. As a rule the drug acted well, but sometimes only slight sleep followed, and in other cases tolerance was soon established. But these occasional disadvantages are counterbalanced by the fact that the drug, even in large doses, does not influence the heart or respiration. Paraldehyde may upset the digestion, causing diarrhoea. The medicine must be pure, it must not redden litmus paper. If kept exposed to daylight or in badly-stoppered bottles it soon becomes acid. After the prolonged use of paraldehyde the following symptoms may appear: loss of appetite, gray coloration of the face, dryness of the skin, and loss of body weight; at the same time the drug does not produce somnolence. These symptoms disappear on discontinuance of

the drug. Paraldehyde, however, is the sheet anchor in the Dorpat Nerve Clinic. Amylene hydrate was also found of use, and has the advantage of not affecting the digestive tract, although it may produce headache and depression. Urethan is of service in doses of 45 to 90 grains in mild cases of insomnia. Sulphonal was given in doses of 15 to 60 grains. It was not found so useful as paraldehyde and amylene hydrate. Drowsiness, weakness, and incoördination of gait were noticed after its administration. In mania it acts only slightly, also in progressive paralysis. In many cases of excessive motor disturbance, such as occurs in mania and delirium tremens, all these hypnotics are practically useless. Hydrochlorate of hyosine ($\frac{1}{10}$ of a grain) is the best remedy in these conditions.—*British Medical Journal*.

INTRA-UTERINE TYPHOID INFECTION.—P. ERNST (*Ziegler's Beiträge*) describes an interesting case of intra-uterine infection. The child, a premature birth from a mother infected with typhoid fever, died on the fourth day after birth, death being preceded by a fine reddish irruption, on the lower extremities and abdomen. The post-mortem examination showed injection of the stomach, enlarged spleen and icterus. Cultures were made from the blood and spleen that developed colonies of typhoid bacilli. Microscopic examination of the spleen showed masses of bacteria plugging the small capillaries in the Malpighian bodies. The peculiar situation of these bacilli showed that a large number of germs had passed into the circulation of the child at one time. This, the author thought, was explained by a trauma sustained by the mother a few days before the birth, in which a considerably quantity of blood had been discharged by the vagina. This injury to the placenta furnished the opportunity for foetal infection. Unfortunately, a satisfactory examination of the placenta and liver of the child could not be made.

A NEW METHOD OF EXAMINING THE LIVER.—A new method of examining the liver, more especially its lower border, is proposed by GLENARD (*Weekly Medical Review*, August 2, 1890). The patient lies on his back, while the physician, sitting to his right, on the edge of the bed, passes the four fingers of his left hand under the right hypochondrium of the patient, so as to press out the lumbar region, while the thumb, applied more anteriorly, makes gliding motions from below upward. If the patient now makes deep inspirations, the thumb will distinctly feel the lower margin of the liver.

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SATURDAY, NOVEMBER 15, 1890.

ONE ASPECT OF THE RELATION WHICH
PATHOLOGY BEARS TO THERAPEUTICS.

The best part of modern medicine is undoubtedly founded upon a pathological basis, *i. e.*, on the changes in tissues which we can discover by an examination of their gross or minute structures, such changes for the most part being either quantitative or qualitative, physical or chemical. Unfortunately for the human organism, the power of regenerating damaged or changed structures is not inherent in it to any considerable degree.

Certain of the lower animals are capable of reproducing limbs or even organs which have been experimentally or accidentally removed. The lobster can reconstruct a complete and perfect claw, or the tadpole a new tail, and further illustrations of this reconstructive capacity are perfectly familiar to the biologist. In man, however, regeneration is usually limited, with few exceptions, to that important though less highly organized group known as the connective tissues. That a liver cell, for instance, or any other parenchymatous or functional cell, was ever reproduced to effect repair in human tissues, is a controverted point, but the weight of evidence seems to be that such regeneration does not take place. This is in accord with a supposed law that the more highly organized or specialized a tissue becomes, the further is it removed from that reproductive function which it primitively possessed, and hence the less is it capable of cell generation or regeneration.

Most of us, if allowed a moment's reflection,

will accord the bulk of our success in treatment of disease to that oft cited something, the *vis medicatrix naturæ*, which, if we are reasonable, we have endeavored to aid by the intelligent use of dietetic, hygienic and therapeutic measures. But what is to be done when the *vis* is wanting? Now, since it has been seen that Nature is incapable of reproducing any of that class of highly organized cells to fill the place of those irreparably damaged by disease, then certainly our whole field of successful therapeutics lies anterior to much that is called pathological. Pathology, in other words, too often dealing with tissues that have advanced beyond the hope of repair. And the task here imposed would be too great for therapeutics in its present state of advancement. But pathology has created a high ideal for it to struggle toward.

Disturbance in function is usually our first guide, and furnishes those indications which we treat; fortunately, also, this first evidence of disease precedes structural change, then by following the clue Nature, or Nature and art, succeed in bringing the process that has gone astray back to the performance of its duties physiologically. We shall suffer much disappointment if we think to restore that which we call pathological, for tissues and their cells, when in this state, have often lost their function. We must then encounter a most difficult problem, *i. e.*, that of establishing a lost function. Art is better able to augment where there is a deficiency or reduce where there is an excess, and even bring back to a physiological standard where there is perversion, than to restore what is lost; Nature, too, even failing here at times.

Pathology makes no compromises with therapeutics. As a fundamental branch of the medical sciences, pathology has been conscious of its own importance from the beginning, and has not been backward in laying down laws or imposing new tasks upon its more ancient though less stable colleague. In this nineteenth century, therapeutics has a leader which it must struggle to obey, but no matter if it does fall short, it need be held in no contempt; a feeling too often engendered at the present day in the mind of the student who has thoroughly imbibed the pathological spirit of the age, especially if he has come under the influence of the German school.

When the medical world gets a great truth, it

often loses much of value when it drops the old in its efforts to seize the new. But in time there is a reappraisal, and the old and new are placed relatively where they belong. Let not, therefore, modern pathology give rise to therapeutic skepticism, but rather render more effective our efforts to deal with disease.

ETHER INTOXICATION.

MR. ERNEST HART, the distinguished editor of the *British Medical Journal*, recently gave an address before the Society for the Study and Cure of Inebriety on this topic.

It has been known for several years, that ether was used for purposes of intoxication in some of the northern counties of Ireland. DR. RICHARDSON, of London, and others called attention to this fact and showed that it was increasing. This address of Mr. Hart groups many of the facts, and presents a most startling picture of this new intoxicant. It appears that somewhere about 1842, ether was sold freely, and used as a beverage in County Derry, Ireland. In 1860 and 1870 it had spread to many of the adjacent towns and counties, and became notorious. It was sold openly by the glass and in larger quantities, and seems to have been used by the poor people, because it was a cheap form of intoxicant.

The Catholic clergy were the first to denounce the practice, but the fear of eternal damnation was not strong enough to suppress it. The demand continued as before, only the use was more secret and less open. Both Protestant and Catholic clergy petitioned parliament to regulate this ether traffic, and also the magistrates called attention to the evils following its use; but practically nothing has been done. Cookstown, Draperstown, and Maghira seem to be great centers in which ether is sold for a beverage. At Cookstown over two tons of methylated ether were sold last year. From Belfast and Londonderry, equally large quantities were shipped to various towns and villages in these northern counties. Each year the traffic is becoming more and more concealed. Several large London ether manufacturers, and also Edinburgh firms, have been making increasing quantities of methylated ether for this demand. This is obtained by removing nearly all the methyl pro-

ducts from methylated spirits, leaving a cheaper ether; this is one of the ethers prepared from rectified spirits, and is sold at wholesale at one-seventh the cost of medicinal ether on the market. It is believed that the breaking up of illicit stills in these counties gave a great impetus to ether drinking, which was cheaper than any other intoxicant that could be obtained.

The peculiar fascination which follows the use of this drug, is the rapid pleasing exhilaration and excitement which comes on a few moments after it is used. This is followed by mental confusion and stupor which wears off as quickly as it came on. At first no particular depressing after effects follow, and the man can become intoxicated and sober half a dozen times a day, at a cost of not more than one or two cents for each two or three drachms. Most of the habitués take two or three drachms three or four times daily, followed by water to cool the mouth and throat. Formerly it was only the poor people of the villages and country who used it, now it has extended to all classes, and is used entirely for its effects. After a time the stomach and brain become affected, and complex forms of gastritis and dyspepsia appear. The brain suffers very profoundly, mania and melancholy are very common. Organic heart disease is also prevalent. Several cases of death have been noted of persons who, while exhaling large quantities of spirits, lit a match and accidentally set fire to the vapors of the breath causing instant death. Generally the effects are much the same as that which follows from alcohol, only more rapid in its interference with the nutrition, and damage to the nerve structure and glandular system.

Its use can not be concealed, as so much of it is exhaled, and a person who has used it is quickly detected by the odor of his breath. Dr. Hart thinks that the use of ether as a beverage is growing in other sections of the country. In Lincolnshire and in London there is clear evidence that ether inebriety has become established. But for some unknown reason it is concealed, both the seller and user are very secretive and do not make any publicity of their infatuation. Mr. Hart suggests that the sale of ether should be regulated the same as any poisons, and that legislatures should take action at once before the evil has reached such proportions as to make it almost impossible to reach it. DR. KERR, Presi-

dent of the Society for the Cure of Inebriety, in an interview on this subject remarked:

People of England have no conception of the terrible hold which this passion for ether-drinking has taken upon men and women in the North of Ireland. A person walking through the crowded and narrow streets of some of the villages there notices the fumes of this drug, with which houses and population seem to be saturated. The market places, the railway carriages, even the churches, reek with its penetrating odor, and one goes away with the sad but true impression that many of the people have become victims to a habit as deadly in its effects as it is new in the history of human weaknesses.

. . . . How many tons of the drug are swallowed by the population of the counties Derry, Tyrone, and Armagh, where the habit is spreading with alarming rapidity, it is impossible to say, for want of accurate information. The amount, however, must be enormous.

Why these people use ether is for the same reason the world over:

Because they are suffering from a disease just as real as consumption or cancer, although not so recognized. I mean, the disease of inebriety, of which the craving for ether in the North of Ireland is one form, just like the craving for alcohol, or morphine, or chloroform, or opium, or cocaine, which, by the way, is the latest thing in the way of hypodermic injections among the fashionable people of London.

Speaking of this form of inebriety he says:

An ounce of ether is enough for a single drink, and costs, after allowing a retailer 100 per cent. profit, only a penny. So you see, for a sixpence a man and his wife can pay all the expenses of a very comfortable spree. Yes, the stuff is sold openly in all the dramshops and groceries, and, to my mind, the only wonder is, given the superior cheapness of ether over alcohol and its thoroughly satisfactory qualities as a drink-producing agent, that the habit of ether drinking has not spread over the whole of Ireland, and, indeed, invaded England and the rest of the world.

It has been claimed that Father Mathew was the cause of the present state of things, inasmuch as he, by his preaching, persuaded the people in Draperstown, in the South of Derry, to renounce all forms of alcoholic drink. This they did, but, having discovered accidentally that ether would answer their purpose quite as well as alcohol, they substituted the former for the latter, and, in spite of Father Mathew's eloquence and well-meaning efforts, Draperstown has continued in a chronic state of drunkenness, although of another kind. Although the people in these districts are consuming enormous quantities of ether every year, the amount of alcoholic drinks sold there has not decreased.

The English papers have taken up this subject, and the government will undoubtedly order an inquiry into the extent and nature of this evil.

In this country a number of isolated cases have been observed, and some writers on inebriety

have warned physicians against presenting forms of ether as narcotics, especially in alcoholic or opium cases. There is evidently danger in this direction in certain cases, and the outcome of this new form of intoxicant and the efforts to suppress it will be watched with increasing interest in this country.

EDITORIAL NOTES.

ACCIDENTAL DEATH OF A PHYSICIAN FROM CHLOROFORM.—Dr. Justus E. Gregory, a well-known physician of Brooklyn, was killed on October 25, by an overdose of chloroform. He had been accustomed to inhale this anæsthetic for the relief of facial neuralgia. On the evening of his death he inhaled a dose of twenty drops on a handkerchief, he felt some relief but called for another dose, and five minutes later was found dead. Dr. Gregory was 49 years of age. He had been a surgeon in the army during the war of the rebellion.

A CRISIS IN BACTERIOLOGY.—Prof. Koch has not abandoned his "momentous investigation," as *The Lancet* calls it, at the Charity Hospital at Berlin; eight patients in Prof. Senator's wards of that hospital being stated to be the number of consumptives that are now under the mysterious Koch treatment. The intimation has been published that in at least two of these patients there have been manifest signs of improvement. The eminent Prof. Leyden, supposed to be the only one of Koch's colleagues who is entirely conversant with the new treatment, has expressed himself most hopefully of the ultimate success of the discovery. It is further intimated that no further disclosure of the treatment will be made until about the middle of December, at which time Koch will have proceeded far enough with his experiments to cast aside the veil of secrecy which is imposed on all, both patients and their attendants, who have participated in them. The letters and telegrams that have been sent to Koch since the adjournment of the Congress are several hundreds in number, and they all remain unanswered pending this investigation upon the patients at La Charité. It can readily be inferred that the continued reticence of Koch has been the wise and proper course, in view of the damage that might have resulted from an immature disclosure, more especially if he has been him-

self misled. Where so much is at stake the cautious and truly scientific attitude of the great bacteriologist commends itself to all men of science. "We may be," says *The Lancet*, "on the verge of a revolution in therapeutics, and bacteriology itself is on its trial in this momentous investigation." The subjugation of the rebellious bacillus of tubercle almost of necessity carries with it the downfall of other disease germs having a less vitality or resisting power.

JEFFERSON MEDICAL COLLEGE.—A serious episode in the history of this college has arisen in the middle of its busiest season. On October 27, if we are correctly advised, the Trustees voted to vacate the chair held by Prof. Bartholow, that of Therapeutics and Materia Medica, basing their action on the ground that the veteran professor is no longer mentally capable of holding the position. Dr. Bartholow proposes to oppose this action, saying that he is as competent, both physically and mentally, to perform the duties of his chair as ever he was, and that the students attending his lectures this year have expressed no dissatisfaction with his instructions. In fact, if the press despatches are correct, his class of students appears to have taken sides with him, and many of them have declared that they will withdraw from the college if a substitute lecturer shall be appointed by the Trustees. Already have numerous possible candidates for the professorship been named, inclusive of Drs. H. Morris, S. Solis-Cohen, T. J. Mays and J. C. Wilson, all of Philadelphia, and S. O. L. Potter, of San Francisco.

JOHNS HOPKINS HOSPITAL COURSE OF POST-GRADUATE INSTRUCTION.—During the coming year, a course of practical instruction to medical graduates will be arranged by the faculty of the Johns Hopkins Hospital, taking up especially the subjects of medicine, surgery, gynecology and obstetrics.

CAN INEBRIATES BE CURED?—The *British Medical Journal* says: We have been accustomed to hear from the Committee on Legislation for Inebriates, the Society for the Study and Cure of Inebriety, and other disinterested associations, that inebriety is curable to a considerable extent. According to certain Austrian wiseacres, we have been the victims of a vain if pleasing delusion, and our encouraging reports have been but brilliant romances. The Permanent Committee of

the Lower Austrian Diet have had under consideration a proposition to establish curative retreats for inebriates. Upon this project the Austrian Sanitary Board has opened a furious bombardment. In a recent report they declare that they cannot recommend the establishment of asylums for drunkards, and the enactment of a law authorizing enforced detention in such institutions. The reason they allege for this remarkable opposition to a highly laudable piece of legislation, is that "it is very questionable whether alcoholism can be cured at all." It is puzzling to conjecture on what authority or experience such a statement could have been made. The records of such homes, where the patients are treated as persons laboring under a disease, both in America and England, show that at least one-third of all the cases, whose after-history has been ascertained, have done well. This is a substantial measure of success, especially when the period of addiction prior to reception into a home is taken into account. That average period preceding treatment has been in the Dalrymple Home eight and one-half years. The Austrian Sanitary Board, apparently as an after-thought, add that in any case the probability of cure is too small to warrant special legislation or heavy expenditure. We have little doubt that this extraordinary attack upon so useful a proposal will stimulate independent inquiry into the results of such special treatment and legislation. The encouraging success thus far obtained elsewhere cannot fail when made known effectually to triumph over the present temporary, if powerful, opposition.

A MOHAMMEDAN FEMALE PHYSICIAN.—Dr. Razie Koutlairoft-Hanum, a young Mohammedan woman, who was born in the Crimea, recently passed a creditable examination as physician and surgeon at Odessa, and now enjoys the distinction of being the first woman of her creed to engage in the practice of medicine as understood by western nations.

THE DIDACTIC LECTURE MUST GO.—The medical college course has been lengthened to three years in almost every reputable college, and now, says the *Indiana Medical Journal*, it is time to take the next step in progress and abolish the didactic lecture. This is the view which the *Record* has advocated, and it is one which must in time be adopted.—*Medical Record*.

TOPICS OF THE WEEK.

MEDICINE AMONG THE MONGOLS.

In Mongolia, the practice of medicine rests chiefly with the priests or Buddhist lamas, whose system is quite elaborate, but based for the most part on superstition. Instead of paying occasional visits to a patient, their method is to reside in his house until recovery or death takes place, or the case is decided to be incurable. The people have great confidence in drugs and medical regimen, including the water-cure, the latter object causing them to resort to springs, both hot and cold, that are somewhat abundant in Mongolia and Northern China. They place implicit confidence in the medical knowledge of the foreign missionaries who visit their inhospitable country, but express wonder and astonishment when their proffered recompense is refused by the latter. A very frequent affection among the Mongols is the itch, due in large degree to their repugnance to the washing of either their persons or garments. In their tents they live so closely together that if one of them gets the itch all soon have it. Various other skin diseases are prevalent among them. Rheumatism is of frequent occurrence, and the remedy largely used for that trouble consists of kneading or a kind of massage; they make use of a "rheumatism stick," a piece of wood so bent that any part of the body can be reached by the patients in their self-application of the kneading process. A peculiar disease, called Narry, due to their indulgence in their native spirituous liquor, is frequent; the stomach becoming intolerant of food so that the patient ultimately dies of starvation. For the bite of a dog they apply to the wound a portion of the fur of the animal; literally "the hair of the dog" is their remedy. They use the loadstone in powdered form as a cure for ulcers, deafness, etc. They attribute many diseases to the influence of the planets and constellations, to offenses committed, and to fate. Hygiene or preventive measures do not enter much into their scheme of treatment.—*Press and Circular*, October 15.

DRAM DRINKING DOCTORS.

The last number of the *Journal of Inebriety* has the following:

"From a long letter written by an eminent medical man, we condense the following: I was greatly shocked at the number of persons intoxicated at the banquet given to the International Medical Congress at Berlin. My surprise was increased to note that many of them were eminent German and French teachers of medicine. I had supposed medical men, accustomed to use wine and beer daily, were less likely to be intoxicated than the partial abstinent American or Englishman, who naturally are more easily affected by large quantities of wine. At the banquet given to the congress at London, a small number of medical men were stupidly intoxicated, and at Washington the number was still less. As far as could be observed those cases were mostly persons not well known. At Berlin it was the opposite; many very prominent men and leaders were offensively hilari-

ous or stupid. The drinking seemed to be of a reckless, impulsive character, which is only seen in low life in this country. At London and Washington, men who were notably excessive users of spirits drank with reserve and caution, and gave no evidence of intoxication, but at Berlin it was the contrary. The doctor concludes, that the moderate beer and wine drinker has far less power of control, and is far more likely to be delirious or stupid from excess of spirits, than the self-reliant occasional drinker in America or England. He believes that the American physicians are the most temperate in the world, and exhibit more pride of character and personal respect at banquets where there is a general unbending of social restraints.

"To this we would add, that in our opinion it is always a sad reflection on the manhood of the medical man, who after a protracted study abroad, brings home with him foreign customs of moderate use of wine and spirits. It implies a degree of ignorance and parrot-like imitation that becomes more and more apparent every year. The physician, of all others, should be the last one to use spirits in moderation or excess. The use of alcohol as a beverage is direct evidence of ignorance of the teachings of modern science and failure to keep up with the growth of medical advance. We believe no facts are sustained by stronger evidence than these."

STAGNATION OF POPULATION IN FRANCE.

The so-called depopulation of France, which really only signifies the fact that the French population has in nine years increased so slowly as to have become almost stationary, is a subject of much interest from a statistical as well as a political point of view. An official notice has, within the last few days, been issued in Paris giving a summary of the vital statistics of France for 1889. The actual number of births registered in France, without regard to population, have steadily declined from 937,944 in 1883, to 880,000 in 1889; the birth-rate per 1,000 having declined in the same period from 24.8 to 23.0. Compared with the other European birth-rates, this low birth-rate in France stands out in striking contrast; the rate is 37.0 in the German Empire, 38 in the Austrian Empire, 37 in Italy, and 44 in Hungary. The excess of births over deaths in France last year was but 86,000; indeed, if the deaths had not shown a remarkable decline, the excess of births over deaths would have been very much smaller. The deaths recorded in France last year were 794,000, and were considerably fewer than in any year since 1874; the death-rate, which had averaged 22.1 in the preceding five years, declined last year to 20.7, but exceeded the death-rate in England and Wales by no less than 2.8 per 1,000. The marriage-rate in France, that is the proportion of persons married, was 14.2 per 1,000 last year, a lower rate than in any year since 1870, when the recorded rate was distinctly abnormal, owing to the German invasion and occupation. It is a noticeable fact that the recorded marriage-rate in France is now scarcely lower than the rate in England and Wales, although the birth-rate in the two countries is so widely divergent. Indeed, so different is the age constitution of the French population to that of the

English population, that the French marriage-rate, calculated upon persons of marriageable ages, actually exceeds the English marriage-rate calculated in the same manner. The low birth-rate in France, compared with that in England, is therefore entirely due to the smaller proportion of births to each marriage, although it is also a fact that the marriage-rate in France has steadily declined in recent years, as has been the case in most other European countries, including England and Wales.—*British Medical Journal*.

ALCOHOLIC CIRRHOSIS IN A CHILD.

Dr. H. M. Biggs has recently presented before the New York Pathological Society a specimen of advanced cirrhosis of the liver, obtained by him at the autopsy of a boy aged only 13 years, whose body also presented all the other usual lesions of chronic alcoholism. It was reported to Dr. Biggs that when the deceased was a baby of 2 years old, he had a bronchitis for which whisky was prescribed. As the child seemed to take a liking to the latter, his parents permitted him to gratify his taste for it, without let or hindrance, and during recent years they had given him money to spend for alcoholic drink. His capacity for disposing of alcohol became so increased that he would take from six to eight drinks of whisky each day, of about 1½ oz. to each beverage. On the day of his death he bought a larger quantity than usual and took it all at one drink. He was found semi-comatose, some hours later, and never rallied. At the post-mortem examination the liver and other organs presented nearly the same pathological appearances that mark alcoholic saturation in the adult.

REMOVAL OF MICRO-ORGANISMS FROM WATER.

Dr. Kruger, considering the fact that more bacteria are usually present in rivers than in lakes, notwithstanding that lakes themselves in many cases are more or less polluted by rivers passing through populous towns, believes that this rapid decrease in the number of organisms may very possibly be due in part to the action of direct sunlight, but in the main to the tendency of water in a comparatively undisturbed state to deposit and precipitate. He therefore carried out a number of experiments with a view to determine how far the removal of organisms was brought about by the mere mechanical deposition of inert matter and also by precipitation as a result of chemical action. The mechanical precipitants employed, all in a state of fine powder and sterilized, were alumina, brick dust, clay, chalk, sand, coke, and charcoal. Water obtained from an ordinary service-pipe was impregnated with a liquid containing a bacillus growth of a species incident to tap-water. This was divided into two portions—one for precipitation with the inert substance, and the other was untreated for the sake of comparison. Experiments were similarly carried out in which precipitation was obtained as a result of chemical action such as is brought about by the addition to the water, containing naturally lime, magnesia, etc., substances like wood ash, sulphate of alumina, and slaked lime. The general conclusion came to by the au-

thor from the results obtained is that undoubtedly large numbers of bacteria are carried down by inert substances merely sinking in the water, but that the action is very considerably increased when, in addition to mechanical deposition, a chemical precipitation also takes place. The corollary is evident—inert substances do mechanically assist in the precipitation of microorganisms, but preference should be given to chemical treatment.—*Druggists' Circular*.

STERILIZED MILK.

So-called "sterilized milk" by no means always deserves its name, in some cases being much fuller of germs than ordinary unboiled milk fresh from the cow. Herr Kohlmann, of Leipsic, on subjecting two specimens of milk sold as sterilized to examination, found that one of them really was so, no germs being discoverable; while the other specimen contained 350,000 germs per cubic centimetre. For the purpose of comparison other examinations were made, and it was found that a sample of fresh milk bought in the street contained about 160,000 germs per cubic centimetre—that is to say, less than half the number in the second sample of so-called sterilized milk. Milk boiled in the kitchen contained 158 germs per cubic centimetre; distilled water kept in an open vessel, 430; waterworks water, 1,064; and water from the Hofbrunnen, 12,000. Herr Kohlmann suggests that the failure of whatever process was used to sterilize the milk may have been due either to water having been mixed with the milk before the process was commenced, or perhaps to too long a time having been allowed to elapse between milking and sterilizing. This last point exercises a very great effect, as is shown by Freudenreich's observations. He found that milk which when received contained only 9,300 germs to the cubic centimetre, after being kept for three hours at 60° F. contained 10,000; after six hours, 250,000; and after twenty-four hours, no less than 5,700,000. It would therefore appear that our knowledge of the conditions under which milk may be readily sterilized is at present somewhat insufficient, and that reports of the results of the feeding of infants with milk which is reputed to be sterilized must always be received with a good deal of skepticism unless specimens of the milk have been frequently examined by a competent person.—*The Lancet*.

DISINFECTION AFTER DIPHTHERIA.

The Conseil d'Hygiène Publique et de Salubrité for the Seine Department passed the following resolution on a report presented by Dr. Dujardin-Beaumetz on September 19: In cases of diphtheria the patient's dwelling should be disinfected free of cost by men belonging to the "disinfecting brigade;" their services can be obtained on application to the Prefect of Police. All things which have been in contact with the patient must be baked in the steam ovens provided by the municipal authorities. For the disinfection of rooms, sulphur (60 grams for each cubic metre of space) should be used, and the floors and every part of the room which can be washed should be cleansed with 1 in 1,000 sublimate solution. The room should be occupied only after it has been carefully dried and thoroughly ventilated.

PRACTICAL NOTES.

CAFFEINE IN PNEUMONIA.

Te Gempt claims that the use of caffeine is indicated in the course of acute fibrinous pneumonia when the heart begins to be enfeebled, the blood pressure of the aortic system lowered, or when the pulse becomes unusually frequent or irregular. The use of the drug should be begun before symptoms of collapse appear. It should be used at the beginning of the disease in debilitated persons, drinkers, old people, and in subjects of cardiac disease. When used at the proper time and in sufficient doses it diminishes the frequency of the pulse and of the respiration, and increases arterial pressure, lowers temperature, and produces a sensation of well-being. After the period of apyrexia it is unnecessary to continue its administration.—*Revue des Sci. Méd.*, January, 1889; *Western Med. Reporter*.

CHRYSOPHANIC ACID IN ACNE.

Dr. Metcalf highly recommends this agent in acne. He says he has not failed to cure perfectly any case in which the treatment has been adopted. The face is to be washed with soap and well dried, at night. Before retiring, the parts in which the acne is, are to be well rubbed with an ointment of 3 grains of the acid to the ounce of vaseline, and this is repeated nightly until a sharp inflammation of the skin ensues. The incision is then omitted till the dermatitis is gone, when it is repeated. In most cases a 3-grain ointment is of sufficient strength, but occasionally the strength is to be increased up to 5 grains to the ounce, or even more. The patients are to be cautioned about the staining of their fingers and clothes and to guard their eyes.—*Can. Lancet*.

ADMINISTRATION OF CHLORALAMID.

Much depends upon the proper administration of the new hypnotic, chloralamid, to obtain the full effect and satisfactory and beneficial results. The dose is from 15 to 60 grains, with an average dose of 30 grains. Chloralamid is soluble in about 20 parts of cold water, and in 1½ parts of alcohol.

An additional caution is necessary: Never dissolve or dispense chloralamid in hot water or warm solutions, as the heated preparation decomposes.

The best modes of administration are:

1. In a teaspoonful of whiskey or brandy.
2. In properly proportioned solutions with wine, spirits, or spirituous compounds.
3. In a small cup of cold water or cold tea.
4. In powder form, in wafers or cachets washed down with cold water.

The following formulas have come well recommended and bear the stamp of general approval and adoption:

Dr. W. Hale White (*British Medical Journal*) says: "I always prescribe it with spirit; 20 grains will dissolve in 1 drachm of rectified spirit in fifteen minutes, and water may be added to this solution without reprecipitating the drug. A good way of giving it is to tell the patient to dissolve it in a little brandy, add water to his liking, and drink it shortly before going to bed."

From an editorial in the *Medical Summary*, Philadelphia, we quote:

- R. Chloralamid, 4 drachms.
Spts. vini gallici, 4 ounces.
Curaçao, 4 ounces.

℞. A teaspoonful (15 grains chloralamid) in water and repeated in four hours if necessary.

Dr. John Aulde suggests:

- R. Chloralamid, 4 drachms.
Spts. frumenti, 3 ounces.
Elix. aurantii, sufficient to make 4 ounces.

℞. Take one tablespoonful (30 grains chloralamid) in water.

Another popular prescription, extensively used in New York is this:

- R. Chloralamid, 4 drachms.
Tinct. cardamom. comp., 2 ounces.
Elixir simplex 2 ounces.
℞. Take a teaspoonful as a dose.

This further suggestion is taken from the *Medical News*: Schmidt employs chloralamid hypodermically, the solution used being 13 grains of chloralamid dissolved in 5 drams of distilled water. Sixteen minims of this subcutaneously is usually a sufficient dose, and acts more rapidly than larger doses given by the mouth.—*Notes on New Remedies*.

INFANTILE CONVULSIONS.

Dr. Jacobi first orders a purgative dose of calomel and then follows in a few hours by:

- R. Chloral hydrat., gr. iv.
Potas. bromid., gr. viij.
Aquæ, } āā f 3 j.
Syrupi, } ℞.

Sig. One dose for a child 2 years old.

VOMITING OF PREGNANCY.

- R. Cerii oxalat., gr. j.
Ipecacuanhæ, gr. j.
Creasoti, gtt. ij. ℞.

Sig. This is to be taken every hour until nausea is controlled.

—Prof. Goodell, Philadelphia.

AN OINTMENT FOR CHAPPED HANDS

is recommended in the *Provincial Med. Journal*, consisting of menthol, 15 gr.; salol, 30 gr.; olive oil, ½ drachm; and lanolin, 1½ oz. It is said to alleviate the pain on the first application.

SOCIETY PROCEEDINGS.

Tri-State Medical Association.

Second Annual Meeting, held in Chattanooga, Tennessee, October 14, 15, and 16, 1890.

(Concluded from page 695.)

SECOND DAY—MORNING SESSION.

The Association was called to order by the President at 9 A.M.

The first paper read was by DR. J. C. SHEPARD, of Winchester, Tennessee, entitled

A FEW REMARKS ON THE FEVERS OF MIDDLE TENNESSEE AND THEIR TREATMENT.

He said the great malarial period extended from the settlement of the country up to about 1840, during which all the fevers of the country were malarial and periodical. Commencing about 1840, the great typhoid period extended until near 1860. During this period malarial fevers were almost, if not entirely, unknown, and typhoid was dominant everywhere and every case was typical. About 1860, or a little sooner, there was a return of malarial fever, but in connection with typhoid fever. This was the typho-malarial period, which continued for fifteen or twenty years.

About 1880, or somewhat earlier, the characteristic symptoms of both typhoid and malarial fever commenced to disappear and have continued until now. This is the period of fusion. We now have only one fever, which is a continued fever, not typically typhoid, nor malarial, nor even typically typho-malarial. There is not now, nor never was, a continued malarial fever, *per se*, in Middle Tennessee, said the speaker.

Of treatment but little is to be said. Cold water baths Dr. Shepard considers impracticable. New antipyretics should be given with caution. He believed that there was entirely too much quinine used in the continued fevers of Middle Tennessee. Physicians could not afford to dispense with alcoholics yet.

DR. L. P. BARBER, of Tracy City, Tennessee, followed with a paper entitled

A CONTRIBUTION TO THE STUDY OF THE CONTINUED FEVERS OF THE SOUTH,

in which he said the continued fevers of the South, their nosology and etiology, form a subject now justly attracting much attention, a subject upon which much is yet to be learned, and over which the medical world is considerably at variance. Only a close and accurate study of the disease by competent observers, in many and different localities, and a thoughtful comparison of these observations with free discussion will advance our knowledge of their nature, and shed light on the vexed question of its cause.

From the first days of his practice, this disease,

so common to all parts of Tennessee and its adjoining States, had proved of great interest to him. Encouraged by the recent vigorous inquiry and research in this direction, he began some fifteen months since to keep a record of all fevers that occurred in his private practice, and the comparison of the cases, irrespective of their different designations, had helped him toward a decision as to the nosology of continued fever.

Dr. Barber then reported a large number of interesting cases, after which the two papers were discussed conjointly.

DR. G. W. DRAKE, of Chattanooga, in opening the discussion, said that the human body is an aggregation of tissue cells, and that there are found among these cells, in various localities or tissues, certain loose cells, migratory, amoeboid, which he would call the police force intended to protect the tissues against the invasion of foreigners. When the foreigner which produces typhoid fever attacks Peyer's patches and the solitary glands, the migratory cells from all adjacent parts, and possibly distant, rush to the conflict. The result is great destruction of life of both microbes and phagocytes, and their putrefying remains produced typhotoxin and probably other alkaloids. He believed typhoid fever to be produced by a germ once external to the body, but said a "judicious skepticism" was allowable as to whether Eberth's bacillus was the sole cause and absolutely necessary to be present in all cases.

DR. JAMES E. REEVES said it was undoubtedly a fact that the malarial influence was slowly but surely traveling northward.

DR. J. A. LONG, of Long's Mills, Tennessee, related his experience in McMinn County, Tenn. The fevers there had all the symptoms of typhoid fever. There were many non-typical cases. Some were cases of typhoid in a malarial diathesis. He believed that some cases of malarial fever continued because quinine was given in too small doses.

DR. H. BERLIN, of Chattanooga, presented some micro-photographs as an evidence of the existence of microbes in these fevers.

DR. GEO. A. BAXTER, of Chattanooga, suggested the use of salol and naphthol in their treatment.

DR. J. B. MURFREE, of Murfreesboro, Tenn., thought it was impossible to have two fevers at once. He said there was no typho-malarial fever. We have mild cases of typhoid as well as of other fevers. The use of antiseptics is the proper method of treating typhoid, together with proper nutrition and stimulation.

DR. REEVES asked Dr. Murfree if he thought typhoid was contagious. DR. MURFREE said it was to a certain extent.

DR. P. D. SIMS, of Chattanooga: Our fevers are not all either malarial or typhoid. We have another fever dependent upon filth. It may be

called *sewage* or *drainage* fever. It is adynamic in type and is liable to take on most of the symptoms of specific typhoid fever. This is the fever now upon us, arising from the continued and increasing pollution of our water supply from sewage sources.

DR. T. Y. PARK, of Peavine, Ga., suggested that as these fevers presented the symptoms of both fevers, it was practical to use the term typhomalarial, as we cannot make the public understand the technical points of difference and we cannot examine our cases for the microorganisms.

DR. GEO. A. BAXTER, of Chattanooga, presented a paper on

SILICATE OF SODA, SOME NEW METHODS OF USE IN SURGERY.

The paper chiefly had reference to a silicate jacket made by a new process of hardening the silicate, which it is claimed is an improvement on all other jackets inclusive of the plaster-of-Paris, woven wire, or watch spring now in use for the treatment of spinal injuries or disease. It is lighter, equally durable, equally immobile when on, and capable of removal at any time, and of adjustment to any lateral pressure desired.

AFTERNOON SESSION.

The Association was called to order at 2 P. M., by the President.

DR. RICHARD DOUGLAS, of Nashville, Tenn., contributed a paper on

ABSCESS OF THE LIVER.

He said that abscess of this organ is the result of absorption of some morbid product from the intestine, or from some ulcerated surface. The bacteria enter the circulation and are deposited in the liver where abscess is formed. This may be with a normal temperature.

Case—Four months after an attack of typhoid the patient had a chill, slight pyrexia, a trace of jaundice, this lasting only a few days. There was a globular swelling in the right hypochondriac region. The only symptoms were a dull heavy pain and tenderness. No general local disturbance. Diagnosis confirmed by aspiration. A free incision let out eight ounces of inodorous pus. Recovery in four weeks. In these cases the adhesions are diagnosed by palpation. When pus is detected it should be evacuated at once. Bleeding per aspiration needle or leeches applied to the abdomen he considers useful, although there is some risk attending aspiration.

DR. G. W. DRAKE said that phagocytosis may furnish an explanation of the occurrence of abscesses in the various tissues and organs of the body, including the liver. The abscess may be a circumscribed locality in which was waged the hardest fought battles between the phagocytes and microbes, containing the disorganized remains of the slain, together with the products of decom-

posing tissue cells and microbes, under the dominion of chemical force, the flow of nerve-force into the contents of the pus cavity being interrupted, or the nerve force transmuted into chemical force, if the doctrine of correlation of physical may be extended to include nerve force.

DR. E. E. KERR, of Chattanooga, reported a *Case of Gall Stones*.

DR. J. B. MURFREE, of Murfreesboro, read a paper on

UTERINE FIBROMA.

He said a uterine fibroma is a morbid growth developed within the walls of the uterus, and is composed of muscular fibro-cells, fibro-plastic material and cellular tissue, and is due to a perversion of nutrition. It is non-malignant and homologous in its structure. Pain, hæmorrhage, rectal and cystic irritations, indigestion, dropsy and exhaustion are some of its results. They threaten life by hæmorrhage, inflammation, septicæmia and pressure.

The treatment is divided into four methods: 1. Symptomatic; 2. General (by medicine); 3. Electrolysis; 4. Surgical.

By the first method we simply treat the symptoms as they arise and ward off threatened dangers. Hæmorrhage is the most troublesome symptom and is best treated by quietude, opiates, etc. The hot douche and the tampon are useful.

The general treatment is by the administration of medicines to cause the absorption of destruction of the tumors. Medicines are powerless to cause the absorption of a fibrous tumor and do no good, except to build up the general system. Ergot is given to cause the death and expulsion of the tumor. Dr. Murfree has no confidence in ergot for this purpose.

The treatment by electrolysis has met with some success and is worthy of trial. It is especially adapted to the interstitial variety.

Surgical treatment is most usually resorted to for the permanent relief of uterine fibroma. It consists in the removal of the tumor by traction, torsion, excision, enucleation, ecrasement and hysterectomy. When the tumor projects into the uterine cavity it is best removed by excision. When it is interstitial it should be treated by electricity. When subperitoneal it had better be let alone unless the woman's life is a burden and death is threatening when it should be removed through a laparotomy or by hysterectomy. Hysterectomy should never be resorted to as an ideal operation, but only as a forlorn hope. But conditions do arise when it is eminently proper and should unhesitatingly be performed.

DR. WM. H. WATHEN, of Louisville, Kentucky, said the more frequently he goes into the pelvis the more often does he find that his diagnosis is not the same as it was before he had operated. Apostoli's method he considered dan-

gerous in private practice. To be successful one must be one of the most exclusive specialists. The tumor may be lessened in size, but there were, as far as he knew, no cures. A fibroma should not be interfered with unless it gives trouble.

DR. RICHARD DOUGLAS wished to emphasize what Dr. Wathen had said regarding Apostoli's treatment. From observation at his clinics and enquiries in the hospitals in Paris, he had not found any cases that were cured, but he had heard of two cases that died as the result of the treatment, one of them being in the practice of Dr. Keith, of London.

DR. L. P. BARBER, of Tracy City, Tenn., said that Apostoli's method was certainly of great promise, notwithstanding the remarks of Drs. Douglas and Wathen. He saw something of the results of the treatment during the past summer, and he had the following results from his friend, Dr. Franklin H. Martin, of Chicago. Of 200 cases, three only received no benefit. About 14 per cent. received some benefit for a time, but this finally ceased. 84 per cent. were symptomatically cured, with a number of cases of actual cures. Dr. Martin has had no deaths in all his experience with electricity as compared with the results of hysterectomy and the use of the knife generally. The result, to the unprejudiced, Dr. Barber thinks, is certainly in favor of the use of electricity in the right hands.

DR. MURFREE, in closing, said he felt that much could be accomplished by Apostoli's method.

DR. WM. H. WATHEN followed with a paper entitled

LAPAROTOMY *versus* ELECTRICITY IN ECTOPIC PREGNANCY.

He said that electricity, the only foeticidal means now recognized as orthodox by physicians who practice destroying the life of the foetus in ectopic pregnancy without laparotomy, is no longer used for this purpose where the pregnancy has continued beyond three and a half or four months, and it is seldom used after the third month. At this time the foetus cannot be killed except by electro-puncture, and the complications and the deaths consequent upon this practice have been so numerous that the most radical advocates of electricity are afraid to introduce the electrodes into the gestation sac. The use of electricity in extra-uterine pregnancy is practically confined to the United States, and while it is advocated by men of recognized ability and learning in obstetrics and gynecology, he was constrained to believe that very soon it will have no support.

Dr. Wathen here entered into an argument in favor of laparotomy, for the difficulty and sometimes the impossibility of diagnosing extra-

uterine pregnancy in the early months is so manifest to experienced physicians, that it would be ridiculous to claim that in all these cases pregnancy existed; while in the cases where laparotomy is done a diagnosis may positively be made by seeing the embryo or the chorionic or placental villi. If the embryo or foetus in an extra-uterine pregnancy is killed by electricity, a more or less diseased condition of the pelvic structures is left that endangers the health or life of the woman; the dangers usually being increased as pregnancy advances. But if a laparotomy is done there is no obstructed tube, or other pathological condition left, and if the woman recovers from the immediate effects of the operation she is entirely cured. Her life is no longer in jeopardy because of the danger of pelvic abscess, sepsis, or exhaustion following an effort to discharge the suppurating contents of the gestation sac through fistulous tracts in the rectum, vagina, bladder or through the abdominal walls. If we could eliminate the cases where there was an error in diagnosis we would find that the mortality from the use of electricity and the bad after results are far in excess of what follows laparotomy in the practice of experienced operators.

EVENING SESSION.

The Association met in Stone Church, and was called to order at 7:30 P.M.

An Address of Welcome was delivered by Dr. G. W. Drake, which was responded to by Dr. G. C. Savage, of Nashville.

Then followed the *President's Address*, entitled

THE DOCTOR.

He said that the man that starts out to be a doctor must understand that it is a life of toil. There is no flowery way to the royal degree of excellence. The laggard, the indolent, the careless never enter the temple of fame. The sluggard never tastes of the royal feast spread for the earnest, industrious worker. He knows nothing of the grandeur of mental comprehension of the real medical scholar. The doctor must be educated, not as that term seems to be understood in these days. Modern education, Dr. Cowan feared, was too much a process of stuffing and cramming. The word education meant more than this. To educate was to draw out, to enlarge, to expand, to develop, and to strengthen.

THIRD DAY—MORNING SESSION.

DR. T. HILLIARD WOOD, of Nashville, Tenn., contributed a paper on

HYPERTROPHY OF THE TONSILS,

in which he said the treatment adopted for relief of hypertrophy of the tonsils had been subject to many variations. The treatment for the reduction of enlarged tonsils was divided into local, constitutional and operative. If the enlargement be due to swelling of the mucous membrane or to

engorgement and congestion of the tonsil, the application of astringents may be of service. The most useful local remedies in the hands of the author are the sub-sulphate and the perchloride of iron, about one to six or eight in water or glycerine, and alum or tannin in powder. But where there is real overgrowth, the remedy, as Mackenzie well observes, must be of a destructive character, and escharotics, not astringents, must be used. Among escharotics, London paste is useful and should be applied once or twice a week. This will produce a slough, and repeated applications will reduce the gland to a normal size.

Constitutional measures to effect reduction of the tonsils includes remedies to combat the diathesis upon which the enlargement often depends, such as iodide of potassium, cod liver oil and the general tonics, as the preparation of iron, and the bitter tonics.

With reference to operative treatment, excision by the tonsillotome is most popular, although the writer prefers the bistoury and vulsellum forceps. The operation is rendered painless by applying to the tonsil a solution of cocaine, and by injecting, with a hypodermic syringe, a few drops of the same solution into the substance of the gland. As a rule, general anæsthetics should not be used. To reduce to a minimum the danger from hæmorrhage, we have comparatively bloodless operations by the cold snare, igni-puncture, and the galvano-cautery amygdalatome. Of these the galvano cautery amygdalatome seems preferable, and is highly recommended by Wright, of Brooklyn. Igni-puncture is tedious, requiring repeated applications, and attended by considerable pain. Moreover, it cannot be employed in the cases of refractory children.

DR. N. C. STEELE, of Chattanooga, said the amount of hæmorrhage depended upon the condition of the tonsil. He would use the bistoury in adults and the tonsillotome in children.

DR. E. T. CAMP has been able to reduce hypertrophied tonsils without operation, by using iodized phenol locally and general remedies.

DR. GEO. A. BAXTER suggested painting the tonsil with flexible collodion.

DR. SAVAGE said there were two indications for operating upon the tonsils, viz.: repeated attacks of tonsillitis, and where breathing was interfered with. He uses only Mathews' tonsillotome. Never uses cocaine. From personal experience and observation he knew the operation was not very painful.

DR. GAHAGAN suggested cold food in cases of incipient tonsillitis and plenty of cold liquids.

DR. REEVES thinks in removing the tonsils we leave cicatricial tissue and so alters the voice. He uses tincture of iodine. He thinks cocaine will not control the hæmorrhage.

DR. WILLIS F. WESTMORELAND, of Atlanta, Georgia, said the frequency of enlarged tonsils

was due to exposure, hence the greater number of cases observed in males. He would operate as soon as they gave trouble. He prefers the bistoury. Cocaine he has abandoned on account of increased bleeding. Igni-puncture was too painful.

DR. FRANK TRESTER SMITH, of Chattanooga, resorts to igni-puncture where he cannot get consent to excision. Bleeding after the use of cocaine may continue for a long time. He said the indications for operating with him were interference with breathing, impairment of the voice, and recurrent tonsillitis. The voice after operation improved as a rule.

AFTERNOON SESSION.

DR. E. A. COBLEIGH, of Chattanooga, read a paper entitled

A CASE OF REMARKABLE INJURY WITH RECOVERY,

and exhibited the patient.

The following history was obtained while Dr. Cobleigh was making a physical examination: "An old well used for supplying boilers with water had been inadequate for the purposes of a rapidly enlarging factory in Chattanooga, and for a considerable period of time work had been going on in the way of deepening said well till it had reached sixty feet below the surface. During the day a heavy steel drill had become so dull that another and smaller one had been substituted for it while the larger one went above for grinding on the power grindstone near the mouth of the shaft. This had been sufficiently sharpened, a loop of rope fastened around it, and a fellow workman was lowering it to the men below when the noose loosened at a depth of about ten feet from the surface, slipped off, and let the implement go dashing down on the men at the bottom with no warning worth mentioning, and it had struck the patient, after falling about forty-five or fifty feet.

At the bottom of the well some of the men were holding the drill (then in use), while the wounded fellow was standing upright on a rough little platform about eighteen inches high, which had been built to afford the striker an elevation from which to wield his sledge to the best advantage.

The implement went down sharp and nearly or quite perpendicular. It struck the man on the back of the neck and ploughed through the tissues to emerge from the right side of the chest, there protruding about eight inches, absolutely impaling him. He stepped down from the platform, supporting himself against the side of the well, and called on a fellow workman to pull out the drill. A stalwart negro with both hands tried to pull out the drill, but failed. He mounted the platform and tried again by a steady pull, which did not budge the impaling instrument; and in

his excitement to get the thing out, he gave it that to and fro motion, with the powerful leverage of the long handle, which one sees resorted to in pulling posts out of the ground. At this procedure the drill loosened and he extracted it from above, just the reverse to its direction of entry.

The patient was now placed in a bucket, very imperfectly fastened to the well rope with a noose passed around him, and holding himself mostly by his own efforts was drawn to the surface, placed in a chair and conveyed to the work-room adjoining the office. The patient is 28 years of age, stands five feet and eleven inches high, weighs 185 pounds, and has a magnificent physique.

Examination developed the fact that the wound of entrance was situated one and one-half inches to the right of the spinous process of the fifth cervical vertebra, just at the point where his neck began to broaden toward the shoulders, and the drill had only missed the spinal column by a hair's breadth. Passing downward and very slightly forward and to the right, leaving rather a smooth opening oval in form from above (perpendicularly), with somewhat inverted edges, it resembled the old-fashioned wounds of entrance of round shot, not very large—not so immense as one would expect from the size of the wounding instrument, yet sufficiently so for the cervical muscles and fascia to show plainly in the wound, especially if forcibly opened. The shape of the wound made it close like a valve, yet air was entering and being expelled with a pink froth at nearly every respiratory effort, though there was no considerable hæmorrhage.

From here the drill passed into the chest cavity between the scapula and the clavicle, at its very apex, without damage to either of these bones, impinging on the third and fourth ribs, which were both fractured from behind right in the line of the wound—evidently the fragments being parted as by a wedge while the drill was *in situ*—then passing down on the anterior and outer surface of the fifth and sixth ribs without injury to either, and emerging by a great gaping and ragged wound, with much eversion of its edges, just at the inferior border of the latter rib and over the interspace below, its centre being at the time of the examination two inches below and one and a half inches to the right of the nipple. There was only moderate bleeding from the wound, into the opening of which Dr. Cobleigh readily introduced the tips of three fingers, and no air was escaping here. The skin and subcutaneous tissues seemed to be so absolutely deadened by the magnitude of the injury sustained as to have absolutely lost all their normal elasticity. He passed two fingers up the tract of the wound their full length, entering the pleural cavity with their tips under the broken ends of the lower fractured rib, which could be distinctly felt. Every-

thing felt torn and indefinite, the ends of the broken bone easily removable, but he was not able by touch to satisfy himself with any degree of reasonable force whether the subjacent lung surface was injured or not, though he thought it was. From top to bottom of the wound in its entire length it measured in a direct line at that time fourteen and a half inches, and the patient must have had buried in his anatomy fourteen and a half inches of steel, an inch in diameter.

On withdrawal of the fingers the wound closed by collapse of its sides, and prevented any profuse degree of hæmorrhage externally. There was intense pain and a marked degree of shock, as shown mainly by the pulse, the mind remaining clear throughout. The integument, however, was quite clammy, and the patient complained of a great deal of chilliness, without any pronounced rigor. There was extreme rapidity and difficulty of respiration, some gasping, and Dr. Cobleigh was strongly of the opinion that the patient would die in a short time, especially as he found the signs of depression increasing rapidly, the pulse losing all tone, flickering, irregular, intermittent, and the mucous surfaces blanching.

DR. WILLIS F. WESTMORELAND, of Atlanta, Ga., read a paper on *Morbid Reflex Neuroses Amenable to Surgical Treatment*.

DR. H. CRUMLEY, of Chattanooga, presented a case resembling epilepsy, which was examined by members of the Association.

DR. J. R. RATHMELL, of Chattanooga, reported a *Case of Abscess of the Liver*.

Dr. Rathmell also reported a *Case of Typhoid Fever*, and Dr. W. C. Townes, of Chattanooga, presented specimens of the intestines, spleen and mesentery of the case.

DR. TOWNES then followed with a paper on *Dilated Cardiac Hypertrophy, with Nephritic Complications*, illustrating his paper by specimens of the condition and others for comparison.

EVENING SESSION.

DR. R. J. TRIPPE, of Chattanooga, reported a *Case of Peritonitis*, which occurred in a strong, muscular, heavy-set negro, who had been struck with a crowbar across the abdomen. Patient died.

DR. C. H. HOLLAND, of Chattanooga, reported a *Case of Phlegmonous Abscess*, occurring in an unusually large man, 25 years old, 6 feet high, and weight 349 lbs.

DR. J. H. ATLEE, of Chattanooga, followed with the report of a *Case of Ovariectomy*.

DR. FRANK TRESTER Smith read a paper on *Flourescein in the Diagnosis of Diseases of the Eye*.

DR. J. E. PURDON, of Cullman, Ala., contributed a very elaborate paper on the *Dynamics of Mediumism*, and, after a long and careful study of the subject, drew fifteen conclusions.

DR. W. C. MAPLES, of Bellefonte, Ala., read a paper on

SOME IRREGULAR FORMS OF EPILEPSY, WITH REPORT OF A CASE.

He thinks his case was either one of epilepsy or hystero-epilepsy. In some respects it closely resembled hystero-epilepsy. His reasons for thinking it a case of epilepsy were:

1. The amount of fever. In hystero-epilepsy there is generally but little or no fever. Some authors hold that we may have a true hysterical fever, but the weight of authority is against that opinion.
2. The complete unconsciousness.
3. The biting of the tongue. Hystero-epileptics seldom or never injure themselves.
4. The facial expression and pupillary phenomena. The facial expression is generally calm and serene throughout a hystero-epileptic attack.
5. The absence of hysterical phenomena in the intervals between the attacks.
6. The sex. While hystero-epilepsy does occur in males, all authors are agreed that it does so quite seldom.

The treatment was by large doses of bromide of potassium by the mouth, and morphine hypodermatically. There were no sequelæ.

DR. J. D. GIBSON, of Birmingham, Ala., presented a paper on

URETHRAL STRICTURE AND ITS COMPLICATIONS.

In the use of sounds, he considers the spherical, or the acorn-pointed sound, the most convenient and practical instrument for the detection of stricture; while Otis and Weir and many others had their special instruments. Dr. Gibson said that if he were compelled to use only one instrument in the cure of all strictures, he would use the sound. He believed that when it was properly used, that there were very few strictures that could not be relieved, and better so by it than any other means; and that the only stricture necessary to invoke the aid of the urethrotome was the old, tight and unyielding stricture in the pendant urethra and meatus. Young and inexperienced men were apt to be disappointed in the use of the sound, simply because they tried to go too fast; the idea should be to dilate the stricture and produce absorption, and not rupture. Internal urethrotomy, while often abused, was a most potent means of treating urethral stricture, it being especially applicable for old and firm strictures in the pendant urethra and meatus.

DR. P. S. HAYES, of Chicago, followed with a paper entitled

NOTES ON APOSTOLI'S METHOD OF THE TREATMENT OF UTERINE FIBROIDS.

He said that one of the best demonstrated facts in the Apostoli operation was the arrest of all uterine hæmorrhages, excepting those cases that are due to puerperal condition. All observers unite in recognizing that the positive pole is the one to be connected with the intra-uterine electrode. To the thinking physician the query is,

why the positive? And the answer comes that in electrolysis, especially when the electrolyte—the fluid undergoing electrolysis—is blood, the clot formed around the positive pole is small and dense, while that around the negative pole is large and flabby. Knowing as we do that oxygen, chlorine and the acids are liberated at the positive pole when electrolysis is performed on the tissues of the body, and also knowing that hydrogen and alkalis are liberated around the negative pole, we have only to apply our knowledge of the action of the acids and alkalis respectively on the blood to explain the observed phenomena.

The occurrence of uterine hæmorrhage does not contra-indicate the use of the method. One of his patient's suffering from menorrhagia came to his office stating that she was drenched with the discharge and came for relief, as it was much easier to come to his office than to go home. The excessive flow did not occur until after she had come down town. Dr. Hayes used the intra-uterine electrode connected with the positive pole, and allowed a current of from 60 to 80 milliamperes to pass for eight minutes. The patient then went home, a distance of three miles, and was in bed the remainder of the day. The next day she was about the house and the flow had nearly ceased. This period was by far the least severe she had had in several months, and the amount of time spent in bed was three-fourths less. The flow was diminished in like amount. Should opportunity again offer itself to use Apostoli's method during a non-puerperal hæmorrhage, Dr. Hayes said he would not hesitate to use it as the best means of securing its arrest.

NECROLOGY.

ARTHUR B. CARPENTER, M.D., of Cleveland, O., died suddenly at his residence October 15, at the age of 37, of fatty degeneration of the heart. Up to within three hours of his death he appeared in robust health. Dr. Carpenter was eminently a self-made man, of commanding presence and genial address; he had obtained a large practice in the domain of gynecology, to which subject he had contributed many valuable articles. He was an active worker and took a prominent position in the local and national medical societies. In his untimely death the medical profession of Ohio has lost a most valuable member. According to an expressed wish his remains were cremated at Buffalo.

HENRY JACOB BIGELOW, M.D., L.L.D., died at his summer home in Newton, Mass., October 30, aged seventy-two. He was educated in the

Boston Latin School and the Harvard Medical College (Class of 1841), besides seeking further instruction in foreign cities. Later, he was for a long time surgeon to the Massachusetts General Hospital; and for twenty years he filled the chairs of surgery and chemical surgery at Harvard without an assistant. He was active in the earlier experiments with anæsthetics, and in November, 1846, made the original announcement in this country of their discovery. He has been an extensive writer and lecturer on surgical topics. One of his works on the mechanism of dislocation by the flexion method (1869) is still an authority. He contributed many valuable papers to the American Medical Association, such as the "Action of Water on Lead Pipes;" articles on Anæsthesia, embracing its statistics, "Cinchonia Cultivation," "Gutta Percha in Urethral Strictures," "Operation for Hernia," and a very suggestive treatise on "Nature and Disease." The above, however, lays no claim to being a complete list. Dr. Bigelow's labors and attainments secured for him membership in many American and European societies, among them the American Academy of Arts and Sciences, the Société Anatomique, the Société de Biologie and the Société de Chirurgie of France. A sister and a son, Dr. Wm. S., of Boston, survive him.

DR. MONTROSE A. PALLÉN died in New York, on October 1. He was born January 2, 1836, in Vicksburg, Miss. His father, a Virginian, was professor of obstetrics in the St. Louis Medical College for twenty-seven years. Dr. Pallén received his medical education at the St. Louis University, from which he graduated in 1856. He spent two years in the medical schools and hospitals of London, Paris and Berlin, and then settled in St. Louis, where he remained till 1884, when he was called to the chair of gynecology in the medical department of the University of the City of New York. During the war Dr. Pallén was medical director of Gen. Henry A. Wise's Legion in 1861, of Gen. William J. Hardee's army corps in 1862, and later of the Department of Mississippi until February, 1863. Subsequently he was sent to Canada by the confederate government to report on the condition of the confederate prisoners on Johnson's Island. He returned to Richmond in 1864, went to Paris, and obtained surgical and medical supplies for the confederate armies. He was sent to Montreal again, but was captured on his way back to the South, and held on parole in New York until the end of the war. He was professor of gynecology in the Humbolt Medical College in 1866-67, adjunct professor of obstetrics in the St. Louis Medical College 1867-68, professor of gynecology in the St. Louis College of Physicians and Surgeons 1869-70, professor of anatomy in the

Missouri Medical College 1871-72, and professor in the medical department of the University of the City of New York 1874-82. In 1883 he assisted in forming the Post-Graduate Medical College. He also served as surgeon to the Charity Hospital.

BOOK REVIEWS.

TRANSACTIONS OF THE MICHIGAN STATE MEDICAL SOCIETY. Twenty-fifth Annual Meeting, held at Grand Rapids, June 19 and 20, 1890.

The volume opens with a fine steel engraving of its President, Dr. George E. Frothingham, of Detroit, and the annual address delivered by him had reference to "The Desirability of Extensive Organization, and Pursuit of a Fixed Policy, as a Means of promoting our Professional Interests." The necessity of organization as a means to success is fully discussed. The creation of the State Board of Health was the result of organized effort, and special reasons for the enlightenment of the people exist in that State by reason of the relations of medicine to the State University. He deals ably, severely and justly with sectarian medicine, and emphasizes the necessity for a higher estimate of scientific studies in the attainment of a liberal education.

The annual address on Surgery was delivered by Dr. J. F. Groner, of Big Rapids, upon "The Causes of Suits for Malpractice and their Remedies." The measure of the surgeon's responsibility is clearly set forth, and citations of judicial decisions are made, and as an important means for the prevention of malpractice suits he advises the enacting of "a law compelling the plaintiff to give bonds to remunerate the defendant a certain percentage of amount for which the suit was brought, providing he fails to sustain his case."

Dr. W. F. Breakey, of Ann Arbor, delivered the annual address on practice of medicine, his subject being "The Mutual Obligations and Responsibilities of the Physician and the People in promoting Medical Science." He discusses the means of promoting such advancement and fully considers the subject of legitimate and illegitimate advertising, as related to medicine and surgery. The relations of legislation are well considered, and the Code of Ethics has an endorsement that should require nothing further in its vindication. He says: "In the majority of cases it is the violator of the Code who violates the code of gentlemanly and honorable conduct."

The subject of the annual address on obstetrics and gynecology, presented by Dr. J. N. Martin, of Ann Arbor, was that of "The Relations of Constitutional Conditions to Diseases of the Female Genital Organs." Mental conditions and influences are ably considered in connection with

the varying conditions of these organs, as well as the more prominent sympathetic relations with other organs and the reciprocal influence upon the general health.

The proceedings and the papers presented in the Sections during the two days form a volume of nearly five hundred pages. The high order of merit obtains both in the papers presented and in the discussions which follow. The arrangement and the publication reflect credit upon the Editor, Dr. Charles W. Hitchcock, of Detroit, and the publishers. The Michigan State Medical Society has a fine record in the past and the promise of a splendid future.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES: A YEARLY REPORT OF THE PROGRESS OF THE GENERAL SANITARY SCIENCES THROUGHOUT THE WORLD. Edited by CHARLES E. SAJOUS, M.D., and seventy associate editors; assisted by over two hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. In 5 Volumes. Philadelphia, New York, Chicago, Atlanta, and London: F. A. Davis. 1890.

We doubt whether the medical profession at large appreciates at what an immense expense of time, talent and labor this valuable annual has been brought out. The publisher, F. A. Davis, has shown a most commendable enterprise both in the venture he has made and in the admirable manner in which he presents these five volumes to the profession. The preparation of such an annual review of the entire domain of medical science has only been possible by reason of the rare ability of the editor-in-chief, with the assistance of an immense staff of sub-editors, embracing a large number of the ablest medical writers in America, the enumeration of whose names would stand for the best possible commendation of the entire work.

In these five volumes we have the cream of medical literature, and the very latest of investigations for the current year. Over eight hundred journals in all the civilized languages are made to contribute to this enterprise. Rare discrimination is manifested by the sub-editors in the selection and presentation of their individual work, and under each general head all that is essential, fresh and valuable comes to the reader in a most available form.

It is impossible to particularize, but after an extended and careful examination of the several volumes, we have only words of commendation for the entire work.

The methods of reference are simply perfect. With such a library, for instance, as that of the "Newberry" at command, by the aid of these volumes, ready reference can be made to all the important papers written in any modern language

on any special subject during the last current year—the essential points being here reproduced.

No public library should be without the series, and no man in our profession who desires to keep himself fully abreast of the times can afford to dispense with this representative of all the leading journals in the world.

The American profession is indebted to the editor, and to his corps of sub-editors, and to the enterprise of the publisher, for the presentation of an Annual for 1890, such as is nowhere else to be found either at home or in Europe.

We earnestly hope that this work will be so fully appreciated, and the encouragement be such, that the enterprise will be carried forward year by year for the benefit of the profession and for the credit of American medical literature.

PRACTICAL ELECTRICITY IN MEDICINE AND SURGERY. By S. A. LIEBIG, JR., Ph.D., Assistant in Electricity, Johns Hopkins University; Lecturer on Medical Electricity, College of Physicians and Surgeons, Baltimore; Member of the American Institute of Electrical Engineers, etc., and GEORGE H. ROHÉ, M.D., Professor of Obstetrics and Hygiene, College of Physicians and Surgeons, Baltimore; Visiting Physician to Bay View and City Hospital; Director of the Maryland Maternité; Associate Editor *Annual of the Universal Medical Sciences*, etc.

In part one of this new book is considered, 1, Electricity; 2, Magnetism; 3, Batteries; 4, Storage Electricity, etc. In Part I the authors say "are discussed the various forms of electrical and magnetic apparatus likely to be of use to the physician in his daily experience with electricity, as well as the most suitable arrangement of cells for any given work, the construction and use of galvanometers, the theory of the chemical actions taking place in the storage-cell or accumulator, and the best methods of caring for the batteries."

Part II discusses: 1. Electro-Physiology; 2. Electro-Diagnosis; 3. Electro-Medical Apparatus. This section "takes up first the effect of electric currents upon the various tissues and organs of the body in health, then shows how these effects are modified by disease, and indicates the methods by which these modifications are utilized for purposes of diagnosis." A chapter follows descriptive of the various appliances most useful in electro-therapeutic work, which may be considered as immediately introductory to the section on electro-therapeutics.

Part III contains chapters on, 1. General Therapeutic Effects of Electricity and Methods of Application; 2. Special Electro-Therapeutics; Appendix and Index. Part III, then, discusses the application of electricity in the treatment of disease. The methods by which electricity is made available for therapeutic purposes are described, and in subsequent chapters the modes of applica-

tion of this agent in the treatment of the diseases of the various organs are indicated. Particular attention has been given to the applications of electricity in gynecology, diseases of the male genito-urinary organs, and in diseases of the skin.

UEBER FEUERBESTATTUNG. — Vortrag gehalten am abende des 13 Februars, 1890, im Naturwissenschaftlichen Vereine zu Mülhausen im Elsass. By PROF. DR. FRIEDRICH GOPPELS-ROEDER. With 5 wood cuts and an appendix. Pp. 108. Mülhausen: Wenz & Peters.

In this small monograph we have a critical review of the subject of cremation from a hygienic as well as historical standpoint. The author first considers the various methods of disposing of the dead: mummification, embalming, and various other methods of preserving bodies, as well as earth burial, and their rapid destruction by chemical means. Then follows a lengthy review of cremation in ancient times, as well as its progress of late years in different parts of the world. The volume closes with an excellent chronological list of the publications relating to cremation.

It has been said that "comparisons are odious," and it would be invidious to say aught against this work, especially as it has been written with a charitable object; as we are informed on the title page the net receipts of the sale of the work are to be devoted to maintaining the vacation colony for poor and sick children located in Mülhausen. The author has, however, chosen a subject already worn threadbare, and although we have earnestly sought for the *raison d'être* within the covers, we can but think that the work is justified by the noble object for which it was undertaken, and which we trust that it will in a great measure fulfil.

STORIES OF A COUNTRY DOCTOR. BY WILLIS P. KING, M.D.

None but the doctor who had been there could have written this book, and hardly one of a thousand at that. Frontier life here has many a graphic description. The real is often more tragic than the unreal, and the sublime, the ridiculous, the humorous and the pathetic are oftentimes artfully and strangely commingled. While neither the writer, who sees so much of the humorous side of men and things, nor his patients, will be apt to die of dyspepsia yet the undertow of influence is always in the right direction, and many a rattling sermon is found in an unsuspected place. His chapter on consultations is drawn to the life, and as to the Code of Ethics—bearing in all relations of society and among men of every vocation—he rates it as the highest law in the universe outside the Bible, and if the authority of the Bible be not recognized, then surely as the highest law imaginable. Ethics, as related to medicine, holds doctors not only to a strict ac-

countability for their conduct one with another, but holds them just as firmly to a strict accountability for their conduct towards their patients and the public generally. He says "if the people generally understood the Code as every good physician ought to understand it, they would all be strong advocates of it." Upon this subject Dr. King is eminently sound. In his closing chapter he pays his respects to quacks and quackery in a way true to life and highly amusing. The book is published by the Hudson-Kimberly Publishing Co., Kansas City, Mo., contains 400 pages, and is well illustrated.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 1, 1890, to November 7, 1890.

First. Lieut. Nathan S. Jarvis, Asst. Surgeon, so much of Par. 2, S. O. 208, A. G. O., September 5, 1890, as directs him to temporary duty at San Carlos, Ariz. Ter., is revoked. On the expiration of his present sick leave of absence, Lieut. Jarvis will report in person to the commanding officer, Ft. Bayard, N. M., for duty at that station. Par. 13, S. O. 254, A. G. O., October 30, 1890.

First Lieut. Philip G. Wales, Asst. Surgeon, is relieved from station and further duty at Ft. Huachuca, Ariz. Ter., and assigned to duty at San Carlos, Ariz. Ter., where he is now temporarily serving. Par. 13, S. O. 254, A. G. O., October 30, 1890.

Capt. William J. Wakeman, Asst. Surgeon, is relieved from duty at Ft. Bidwell, Cal., to take effect on the final discontinuance of that post, and will then report in person to the commanding officer, Ft. Huachuca, Ariz. Ter., for duty at that station. Par. 12, S. O. 254, A. G. O., October 30, 1890.

Capt. William H. Arthur, Asst. Surgeon, is relieved from duty at Ft. Bayard, N. M., and will report in person to the commanding officer, Ft. Grant, Ariz. Ter., for duty at that post, relieving First Lieut. William B. Banister, Asst. Surgeon. Lieut. Banister, on being relieved by Capt. Arthur, will repair to this city, and report for duty to the commanding officer, Washington Bks., D. C. Par. 12, S. O. 254, A. G. O., Washington, October 30, 1890.

Lieut. Col. Dallas Bache, Surgeon U. S. A., Medical Director, Dept. of the Platte, is granted leave of absence for one month. Par. 6, S. O. 82, Dept. Platte, Omaha, Neb., November 1, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 8, 1890.

P. A. Surgeon J. M. Edgar, ordered to the U. S. S. "San Francisco." November 10, 1890.

Asst. Surgeon L. W. Spratling, ordered to the U. S. S. "San Francisco." November 10, 1890.

Medical Inspector Chas. H. White, ordered to the U. S. S. "San Francisco." November 10, 1890.

P. A. Surgeon Horace B. Scott, placed on the Retired List October 31, 1890.

P. A. Surgeon Richard Ashbridge, surveyed and sent to Hospital, Philadelphia, Pa.

Asst. Surgeon R. M. Kennedy, detached from Navy Yard, League Island, and ordered to U. S. training ship "Richmond."

Asst. Surgeon L. W. Atlee, ordered to the Navy Yard, League Island, Pa.

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ORIGINAL ARTICLES.

THE SURGERY OF THE ABDOMEN, WITH SOME OF ITS RESPONSIBILITIES.

*Read in the Section of Medical Jurisprudence, at the Forty-first
Annual Meeting of the American Medical Association,
Nashville, Tenn., May, 1890.*

BY THOMAS H. MANLEY, A.M., M.D.,

VISITING SURGEON, THE HARLEM HOSPITAL, NEW YORK.

(Concluded from page 625.)

THE SURGICAL MANAGEMENT OF TRAUMATIC PERITONITIS.

Acting on the good old maxim that "an ounce of prevention is worth a pound of cure" we have endeavored to dispense with therapeutic measures formerly in vogue, in the treatment of peritonitis, by resorting to operative interference in wounds within the abdomen, and have generally succeeded, but unfortunately, lost most of our patients. Septic infection can be absolutely prevented by flushing with antiseptic fluids, and by drainage. But reliable antiseptics are all irritants, unhappily, and leave everything they come in contact with, more prone to adhesive inflammation than ever. Further, antiseptic flushing has been so often followed by mortal collapse, that now, many distinguished operators, have discarded it altogether. The means taken to save, then, will often destroy the patient's slender chance of recovery. Hence we must regard laparotomy under those circumstances, like a hip-joint amputation, always as a capital operation, of the first magnitude.

We still read of the many and varied methods devised by ingenious and enthusiastic surgeons, for the purpose of simplifying the technique, of intestinal operations. I shall not readily forget the impression Prof. Senn made on myself, when I listened to his original and famous monograph on intestinal surgery. The vivid and seductive manner in which he portrayed the great number of experimental operations within the peritoneum, from a mere puncture, to the excision of many yards of intestine, completely amazed and confounded his audience, as it has since, a large part of the medical world.

From thence what could the surgeon do, when

perforations are suspected, but cut down; and if he found a considerable segment destroyed, cut it out, and oppose the divided ends, throwing a fold of mental graft over the annular seam; or if necessary go above or below as the case might be, lay open the intestinal walls, *lê-le-a-lê-le*, restoring the bowel's continuity by making an opening in each, and adjusting these margins with some kind of absorbable collar. But I have found from personal experimentation on the intestine of the dog, that no reliable clinical inferences, could be drawn from such operations. The canine suffers but little shock, when the abdomen is opened, and owing to the great thickness, and remarkable tensile strength of the gut, it can be readily manipulated without laceration or injury. With them we have total want of mental association, with their physical condition. The element of psychological influence, as a factor, in the way of fear, suspense and apprehension is absent.

Further, extensive, prolonged and most searching observations on experimental intestinal surgery were made in the early part of the present century; in England, by Calison, Bell, Travers, and Hennan, and in France particularly, by Joubert, Gelly, and Lember; the latter who first used the suture associated with his name; on animals, but never on living man; but these investigations were not largely extended to the human family and were condemned, with general accord. Wounds of the peritoneum have from time immemorial been regarded with most serious apprehension; for lesions in this situation of a traumatic character, always have been attended with a great mortality. With the aid of ether it was hoped that the shock might be diminished, and with antiseptics infection prevented. It was soon found, however, that anæsthetics and antiseptics have their dangers. The pump-like action of the diaphragm in men seriously interferes with primary union.

Again, the very large incision in the median line necessary for purposes of inspection, leaves a tendency to hernia, for it must be remembered that a very large opening must be made for the extrusion of the intestines, and especially if any of the fixed viscera are wounded. The bowel after repair must enter its abode, through the same aperture by which it came.

Very much has been said about the short time occupied necessarily, when advantage is taken of modern methods, so-called, in doing an intestinal resection. This is perhaps, most loudly proclaimed by those who have never done an enterectomy on a human being. They allege that fifteen or twenty minutes are ample. These statements are most delusive and dangerous. I believe I am within the limit, and close to fact, when I say that the surgeon doesn't live who can do full justice to his patient, and perform an operation involving the resection of a wounded intestine, in less than *two full hours*; timing the operation, from when the original incision is made to the completion of the dressings. This isn't any haphazard assertion, for I have timed myself, and some of our best known surgeons; with perfect light, every possible facility, and a corps of trained assistants.

There are many almost insurmountable obstacles in the way of surgical treatment of those cases under consideration, by laparotomy.

The profound constitutional disturbance, collapse, and prostration, make immediate interference, extremely hazardous; whereas if we wait for full reaction and hold off many hours, active inflammation with all its embarrassing complications will menace us.

Along with this, now the patient has marked bodily weakness; low in spirits, and has a most pronounced aversion to every sort of surgical aid which contemplates the least mutilation. Added to this, the subcutaneous tissues have become congested and œdematous, and the inflamed bowel enormously distended. Adhesions will be found, in every direction.

Now it may be urged on theoretical grounds that many of those penetrating wounds are inevitably fatal if we treat them on conservative lines, and decline to actively interfere. How extensive an injury the abdominal viscera may sustain, and recover from, can only be determined by practical observation, and the accumulated experience of many investigators. We have had too many well authenticated instances of intestinal penetration, by missiles, to have any doubt about the wonderful, recuperative, power of the alimentary tube.

The stomach after a full meal has been torn through by a projectile, as in Hinton's case, wherein a young man was assaulted with murderous intent, by his mistress, immediately after breakfast, the grumous mass flowing copiously through the aperture of entrance. With rest, moderate doses of opium and topical treatment he made a good and rapid recovery, and with no fistulous opening remaining.

It is said that an injury causing a laceration of the gall-bladder, or its ducts, with bile extravasation was always fatal. But Paroisse has reported a case in which a man was stabbed in the region

of the liver, wherein after the wound closed painful abdominal distensions followed. Paroisse tapped him three times removing, more than four gallons, of pure bile. The patient recovered perfectly.

Having detailed some of the serious dangers which menace the patient, when he sustains a penetrating wound of the intestine, and a few of the difficulties which lie in the way of treatment by recent methods; let us see how cases do in which the innovations of modern surgery are largely dispensed with, and the warnings of a past generation of renowned military surgeons is not entirely unheeded; when more is left to nature. At first sight this seems not only perplexing, but incomprehensible; though on second thought, when the processes of repairs are carefully studied; when the structural elements, the physiological peculiarities are carefully borne in mind the problem is capable of a simple solution, which I will endeavor to explain, as I regard it.

A man being shot, the ball penetrating the peritoneum, divides a blood-vessel or intestine, in transit. For the instant, it would seem as though, simultaneously with the flash of the explosive, life was annihilated. The victim staggers, reels, and falls. For a few seconds he seems actually dead. The cerebro-spinal centres are palsied, and there are no manifestations of life, except now and then a feeble gasp, and a flickering, intermittent pulse. The features are sunken and he is deathly pale. The skin is covered with a cold clammy perspiration; the body is limp and motionless.

An intestine is perforated. If this is the case, then we must have a free communication from the bowel into the peritoneal cavity.

Not necessarily, by any means. In the first place, because the gap in the gut is at once filled in, more or less completely, around the circumference of the wound, and secondly, because, there is, physically, no such thing as a cavity within the abdomen. All its contents lie in close contact, the parietal muscles, maintaining a constant, uniform, unremitting pressure, on all the viscera.

Bearing in mind a well known law in natural philosophy, with respect to liquids always flowing in the direction of least resistance, we can understand, why there is not in every case of intestinal puncture a free escape into the adjacent parts. We do not have it, because the pressure is as great, without as within the lumen, of the intestine. But little air can enter through the bullet-track, as its walls fall in, and collapse. It would be fair to assume, however, in spite of this salutary provision, that when peristaltic action would commence, it would seriously disturb the quiescent state, so essential to recovery. It is interesting to note just what does take place. When a limb or organ is maimed, it at once

assumes a passive state; tolerating no disturbance or motion without enduring the most torturing pain. We witness the intestine respond to the same identical law; as when wounded, active vermicular motion instantly ceases. It is the same in all acute congestions or inflammation of it. As a consequence we find our patient persistently constipated, often for many days or even weeks, in peritonitis, with perfect impunity. Not a few laparotomies have been done in such cases, under the supposition that there is some mechanical impediment obstructing the bowel; but failure to find a constriction and verify it, promptly, post-mortem, demonstrated this peculiarity of the intestinal tube when inflamed, with its serous-coat.

Hæmorrhage within the peritoneal cavity in moderate quantities, is promptly absorbed.

Constitutionally the patient should be kept on low diet free from pain; and at ample rest, under all circumstances. Before closing this part of our subject, it is necessary, to give by figures, the actual mortality attending those cases which we have considered. I quote from one of the most reliable contributions lately published, by one of our most enthusiastic and able advocates of surgical interference, and a man of rare and commanding attainments.

Dr. Stimpson gives the results of treatment by interference and non-interference in cases which occurred in New York City prior to October, 1890. He says of laparotomy for gunshot wounds of the abdomen, that it was performed on thirty patients with a mortality of 83.66 per cent., or one recovery out of six. There were treated in different hospitals of the city in the preceding ten years 37 cases of the same class of wounded, by non-operative interference with 17 recoveries and 20 deaths, or 45.94 per cent. cures. He quotes the French surgeon Minier's reports of the late campaign in Tonquin, of gunshot wounds of the peritoneum in 63 cases treated by expectant plan; 53 deaths or mortality 78 per cent. Such then is the actual status of the operation for penetrating gunshot wounds of the peritoneum.

Dr. Stimpson argues that many of those reported as cured by conservative methods, may not have been penetrating wounds, and should not be placed in that category. That seems to me, however, begging the question. Those records come from the hands of skilled and experienced surgeons; who inasmuch as they scarcely thought of operative interference when they made their diagnosis, were not swayed by any bias. The impartial observer must acknowledge that Prof. Stimpson's essay, gives no good ground for encouragement, for the future. Nothing is offered, or is demonstrated to show how the attendant dangers of laparotomy can be obviated.

Dr. Stimpson in closing his monograph, in ques-

tion gives cold comfort to those of us who look for a hopeful future, for laparotomy. He says, "In the present state of our knowledge, it cannot be said that interference or non-interference should be the rule, in practice, and the surgeon may be guided by his own convictions, and feelings, whether they lead him to seek as much good, or only as little harm as possible."

This short paragraph epitomizes the whole subject. Hence, when we are called on to deal with those terribly serious cases, we should proceed slowly and cautiously; never to advise or perform any sort of exploratory-incision in penetrating wounds of the abdomen, which may put our patient's life in further peril, and perhaps remove his only hope of escape from death, without the advice and assistance of the most skilled and experienced consultants; for it has, in more than one case, within the past few years, been a question for juries to decide, whether the deceased came to his death in consequence of a murderous assault alone, or whether surgical interference, did not deprive the victim of his only chance of recovery.

Let us hope that after another decade of years; with greater experience and extended knowledge of the pathology of those lesions, with a better appreciation of the therapeutic requirements, our results may be more encouraging.

THE PATHOLOGICAL SURGERY OF THE PERITONEUM AND ITS ENCLOSED VISCERA.

Although I have had considerable experience with traumatic lesions within the abdomen, and did the third successful laparotomy for penetrating and perforating gun-shot wound, involving the intestine in the city of New York, yet owing to a sort of traditional impression, and I believed a sound knowledge of the pathology of derangements in this region, I was loath to take up the scalpel, until I was convinced that other remedial measures, local and constitutional, were powerless, and the efforts of nature were futile. But within a year, several circumstances conspired to induce me, to take a somewhat different view of the matter. Abbé, of New York, had devised the catgut-ring, and reported successful cases of operations requiring intestinal anastomosis on the human subject.

I had the pleasure of listening to the almost unanswerable argument of Dr. J. A. Baldy, of Philadelphia, at our late convention in Newport, on the "Surgical treatment of peritonitis." Added to this my medical friends, were sending me cases, for the express purpose of having laparotomy performed.

The contagion was spreading, and I was being consulted outside of the hospital, for obscure abdominal lesions.

With the rather unanimous accord on the question of abdominal section, I began to feel that after

all, my conservatism, had gone too far, so I decided to give the next case which came under my observation, the benefit of this catching innovation. I did not have long to wait, as the very day after my arrival home from Newport a woman came to me to have laparotomy done, if necessary.

Case 1.—Patient a well nourished person, 35 years old. She had steady pain over the liver and had noticed her abdomen greatly enlarged. Dr. Hoffeimer who brought her to me suspected malignant disease of the liver. That was my conclusion after examination. Inasmuch as I could not give an absolute opinion, and she was desirous of making most any sacrifice to know, a few days later in the Harlem Hospital, I did a laparotomy, and found the liver, one solid cancerous mass. She rallied well, from the operation, which was a very simple one, but died on the evening of the second day from prostration.

Case 2.—Dr. A. C. Cox sent a man to Harlem Hospital, who had obstruction of the bowels for eight days. The fellow's general condition was good when I saw him, except for some faecal vomiting. As the doctor had exhausted the usual remedies, and sent the case to the hospital for a laparotomy, I did not have much discretion, in the matter, and went on and did an abdominal section. I found a short loop of the small intestine nipped by a thin constricting band and presuming it to be gangrenous, I cut it away, and did a circular enterorrhaphy. There was no peritonitis present. Result: patient never rallied, dying early the following morning from exhaustion.

Case 3.—A man was brought into my ward in the hospital with general-peritonitis; transferred to me, from the medical division. His general condition was very bad. On opening through the right semilunaris a perforation of the caudal appendage was discovered; but it had formed firm adhesions with the caput-coli. Everything within the abdomen was pus-soaked. Pockets of pus were found in every direction; all the viscera being bound together in one compressed mass. Recent adhesions were broken up, the abdominal cavity flushed and drained. The patient felt rather better after the operation, but died on the following day.

Case 4.—Strangulated inguinal hernia; man 52 years old. One yard one and one-half inch resected for gangrene. The man rallied well from the operation and gave every promise of recovery, but died rather suddenly on the evening of the third day. At an autopsy a leakage was found in the line of suture near the mesenteric insertion.

Case 5.—A young man having been run over by an ice wagon was brought to Harlem Hospital complaining of severe pains over the right hypochondriac region. The usual topical appli-

cations were applied. On the eighth day he was up and about and desirous of leaving the hospital. But the visiting physician thought it well for him, to remain a day or two longer. On that evening he secretly induced the orderly to give him an enema. The next day, and day following he was in great distress, from an enormously disturbed abdomen. I opened the belly on the right of the rectus abdominalis muscle and more than two gallons of bile flowed away. We found a rupture of the ductus communis choledicus near the junction of the pancreatic tube. Old adhesions were found about the seat of leakage. It was evident that nature was doing the work of repair when the strain of the large rectal injection tore up, the walling, in which nature had provided, with the result described. A cholecystotomy or a cholecystectomy was altogether out of the question, as everything was welded together by adhesive inflammation, besides, the flagging pulse warned us to desist from further manipulations. He died thirty hours after laparotomy.

Case 6.—An aged physician who had strayed away from his regular brethren, into the homœopathic camp had ailed for some time. At first he fell to treating himself with electricity,—with which he believed he could cure anything—with great diligence and regularity until his wife a most estimable and observing lady, seeing that it rather aggravated his condition made him desist, when his homœopathic *confrères* took him in hand. After a time, I was requested to assume charge of the case, when I recommended Prof. Gerster for consultation, and to operate if necessary. An exploratory incision was performed. To say it was done by Prof. Gerster is enough to warrant that no antiseptic precaution was omitted. The doctor never rallied, and died thirty hours after. On post-mortem cancer of liver was found. I should state, that at the time of operation, the gall-bladder was found greatly distended, from which nearly a hundred gall-stones were removed, of various sizes.

Case 7.—The patient was a man 30 years old; was brought in by the ambulance, for operation, for treatment of a strangulated hernia. The intestine nipped was discovered to be gangrenous in patches. Ten inches were cut away and lateral anastomosis performed with the Abbé ring. The operation was rapidly performed though it was somewhat complicated; as the sphacelus involving the bowel, extended up close to the immoveable cæcum, and I was obliged to open freely the lateral abdominal wall, to make space for manipulation, and for the return of the gut, with the catgut apparatus, which was of considerable size, making a bulky, awkward mass to handle. Our man nearly sank on the table, but after his return to bed recuperated fairly well, though never fully regained consciousness, and

died the following night. On post-mortem sound union was found, over the seat of anastomosis. Not the slightest trace of septic peritonitis was present.

With this mortality record, in seven consecutive cases, it is scarcely a matter of wonder, that I am very skeptical, when I hear it proclaimed, that no delay should be made, in making an ocular inspection of the abdominal contents, in that class of cases, wherein, diagnosis is obscure, or difficult; in those, whose pathological condition, is invariably fatal, by its very nature; and especially in female diseases, which usually will yield to hygienic and constitutional measures.

It may be contended that all of my cases of last year, were surely fatal, any way. I will admit this of cases Nos. 3, 4, and 7, but not of Nos. 1, 2, 5 and 6.

Since last June I have had two cases of obstruction of the bowel, in my own practice, one of six days' and one of nine days' standing; one woman and one man, treated by non-interference, with good results, and was called in consultation in two others; one being Dr. Jas. Moran's and one being Dr. A. J. Fitzgerald's patients; one of five days, and the other, nine days; obstruction in the latter, acute peritonitis; I advised against operation and both recovered.

With our patient who died after operation for internal strangulation, the constricting band gave way very readily under the finger nail, and I am not sure that the bowel excised might not have been safely returned to the cavity of the abdomen.

In Case 5, though the gall-duct was ruptured, I do not see, why the effusion of bile, if drained away with the canula should in itself compromise life. Varoise has proved by his case that this is possible.

The peritoneum in woman, in fair health, will tolerate most any sort or degree, of mutilation in the removal of morbid growths and accumulations. But even if they do survive the operation, let us not close our eyes to the state of things which follow as a sequence, bearing in mind the proneness of the peritoneum to take on adhesive inflammation on irritation of the most trifling description, much less the violent and protracted, bruising and tearing, which is often done in the operations on the female. That this is no exaggeration is settled beyond question, by the present indications; by the collapse of the laparotomy boom, the craze which was gaining a mischievous prominence, but which is now condemned by many of its former, and most brilliant advocates. A grand future seemed to have opened for intestinal surgery; but its application to the human subject, has a very limited range.

In reporting my last fatal case of resection of the intestines, in the Academy of Medicine, I said that I had never heard of a case, in a male, in

which the patient survived an operation which entailed the resection of the gangrenous gut, in strangulated hernia. Dr. H. C. Dalton, of St. Louis, who was present, stated that Dr. Prewitt, of St. Louis, has such a case with recovery, but that it had not been reported. Since then Dr. Dalton very kindly sent me Dr. Prewitt's notes on the case. Dr. Prewitt performed the operation on November 20, 1888, removing ten inches of the intestine, and his patient left the St. Louis Hospital three weeks after the operation a well man. The doctor says "he disappeared after the operation, going on to Indianapolis, where he has done hard work constantly since with the pick and shovel, now nearly two years, and has not worn a truss."

NON-OPERATIVE METHOD OF TREATING ABDOMINAL DISEASES.

No one, I am sure, will deny, that of late, we have been going too far with operative interference in those pathological conditions peculiar to woman, neither am I satisfied that the new nomenclature of these maladies has tended to a clearer elucidation of their real pathology.

Modern authors tell us that pelvic cellulitis is a misnomer; that a localized collection of pus is not phlegmon; besides, they have given to a very simple and common variety of affections, designations, of a most complex, unpronounceable and meaningless character; to give their Greek or Latin derivations, I am sure, some who use them most frequently, could not do. But they are novel, catching, and mysterious to the simple, and unsophisticated. As a matter of fact, exclusive of those conditions, dependent on a malignant nature, and ovarian cysts of great volume, there are few diseases occasioned by pathological mutations within the peritoneum, which are not amenable to medical treatment.

Those congestive, inflammatory, and suppurative processes encountered here, can, in the vast majority of cases, be successfully managed, I believe, without the use of the scalpel. I certainly do not mean to imply that there are not cases, which may demand surgical aid, or that there are not often afflictions when this may be resorted to for temporary relief, and in shortening the course of a painful, chronic malady, but what I do insist on, is that cases within this category are very rare. If we had much doubt about this we might simply examine into what threatens to be the next panacea, which will do in woman's pelvis, what it cannot elsewhere; which will soon displace laparotomy, and which we all know, exclusive of its psychological effects, possesses little utility. However, we must admit that electricity, in some respects, has been a real Godsend, in the way of diminishing the practice of laparotomy, in those cases which rapidly cure themselves if left alone.

These being my impressions, on what I regard as the essential difference between the treatment of pathological lesions, by surgical and constitutional measures; here as in traumatism, an operation, involving the division of the perineum, should never be performed, until all ordinary remedies fail, and never without a consultation. The patient herself should also be fully informed of its immediate dangers and remote results.

CONCLUSIONS.

1. Enough has been considered in this article, to admonish us, to proceed with caution when we contemplate an operation, which involves an abdominal section.

2. The melancholy statistics, of interference in gunshot or penetrating wounds of the abdomen, must not be unheeded, and operators should proceed slowly with exploratory incisions, until the art of diagnosing and localizing lesions within the peritoneum has reached greater perfection, than at present, obtains.

3. The varied modern tests of intestinal laceration having been proven to possess no substantial value, as we are yet without means of determining whether or not the intestinal tube is wounded; where, or to what extent, and hence we are unable, to intelligently direct, remedial measures.

4. Though anæsthesia and antiseptics have been a precious boon to mankind, and have lent their aid in the entire revolution of surgery, still it does seem that our progress to-day, in dealing with serious abdominal wounds, or lesions, is but a little in advance of the eighteenth century; and this must be so, while we are in doubt, as to the nature and extent of the lesion, and have no way of estimating the degree of shock, which sundry individuals possess.

5. While in penetrating wounds of the intestine, the indications for treatment from a mechanical standpoint, are clear, to fulfil those, without compromising life, is the difficulty, which yet remains.

With the limited time allotted me and the manifold and varied pathological mutations within the peritoneum, I have been able to, but touch on a few of the most common here, situated.

I have endeavored to demonstrate that very many acute affections may be safely limited to medical treatment, without any surgical aid; though I do not ignore the fact, that in the hands of the skilled and experienced operator, many of those grave cases are the safest; and that there are not a few in which the surgeon's aid is imperatively demanded. What I wished to combat, was, that surgical should not be the only treatment, and the prevailing impression that abdominal operations are not always serious. I wished to strongly emphasize what has lately occupied my attention, viz.: that a recovery from an operation was not a cure, in any sense.

I have regarded very many of our modern operations as not only reckless mutilations but an interference, vicious, and unnecessary; which are invariably followed by most serious consequences, to the patient. I am not aware that Christian or civil law authorizes, or justifies us, in unsexing a woman, unless her life is in positive peril, or without her own and nearest relations' full consent.

It is incontestable that in these days, when the contest for bread is close; and with our profession which gives gratuitously more in the way of free service than any other, the temptation to do those operations, which pay large fees, is very great; especially when the contingent fee is always in hand, whether the case goes ill or well.

The most valuable operations are the simplest. But after all, the mere manual part, in my mind, is the inferior; as the real art, lies in knowing and recognizing when the time comes, that nature is powerless and the scalpel must be taken in hand.

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A NEW ANTERIOR CHAMBER SYRINGE.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY J. A. LIPPINCOTT, M.D.,

OF PITTSBURGH, PA.

At the last meeting of the American Ophthalmological Society, in a paper on "Irrigation of the Anterior Chamber," I described a syringe which I had employed in fifteen cases of cataract extraction and in two cases of hypopyon. Since that meeting I have continued this method of cleansing the anterior chamber in the two classes of cases referred to, with what I am inclined to think very favorable results.

A large majority of the cases of hypopyon which we see in Pittsburgh, judging at least from my own experience, arise in connection with cor-

neal wounds produced by pieces of coal. Whether owing to some malignant quality in this substance, or to malnutrition incident to the occupation of the miner, hypopyon thus originating is a very serious affection, and its tendency is to destroy the function and even the appearance of the eye. Notwithstanding the most conscientious application of the usual remedies, viz.: bichloride of mercury, atropine or eserine or both, hot water, the actual cautery, and incision of the cornea, the morbid process is apt to lead to large anterior synechiæ, abolition of the anterior chamber, and more or less flattening of the globe. In these cases there is nearly always plastic iritis with the formation of masses of degenerated lymph, mixed with pus, which adhere with great tenacity to the intraocular tissues, and require for their dislodgment the introduction of some form of instrument into the eye.

These accumulations are removed by the syringe in a very satisfactory manner. I am in the habit of introducing the nozzle through a moderately large corneal incision, and then letting the current run steadily until the chamber is perfectly cleared, in the meantime moving the nozzle about in various directions, especially directing the stream against that part of the inner corneal surface which is opposite the area of ulceration, and even rubbing this surface with the smooth tip of the nozzle. At the same time I do not hesitate to break up by means of the nozzle all iris adhesions which do not seem very resistant. After the anterior chamber is thus thoroughly cleansed, the ulcerated surface is well cauterized, and the usual treatment instituted. Surprisingly little reaction follows the operation, and the results are better than I formerly ventured to hope for in the form of hypopyon in question.

I am strongly inclined to believe that the introduction, or rather reintroduction, by McKeown and Wicherkiewicz, of the practice of washing cortical remains out of the anterior chamber in the operation for cataract, marks a distinct advance in ophthalmic surgery. During the past year and a half I have made use of this procedure in forty-nine out of fifty-two extractions; and, although my statistics are not yet ready for publication, I may say that the results obtained appear to fully justify the adoption of the measure. In the whole series there was no serious case of inflammation following the operation, certainly none that militated against a good result. There was one case of failure due to escape of fluid vitreous produced by the violent restlessness of the patient, who was withal extremely deaf. But even in this case there was no reaction, and at the end of a week all the external appearances were those of a perfectly successful operation. The healing process in the other cases was so uniformly smooth as to scarcely cause me an anxious thought.

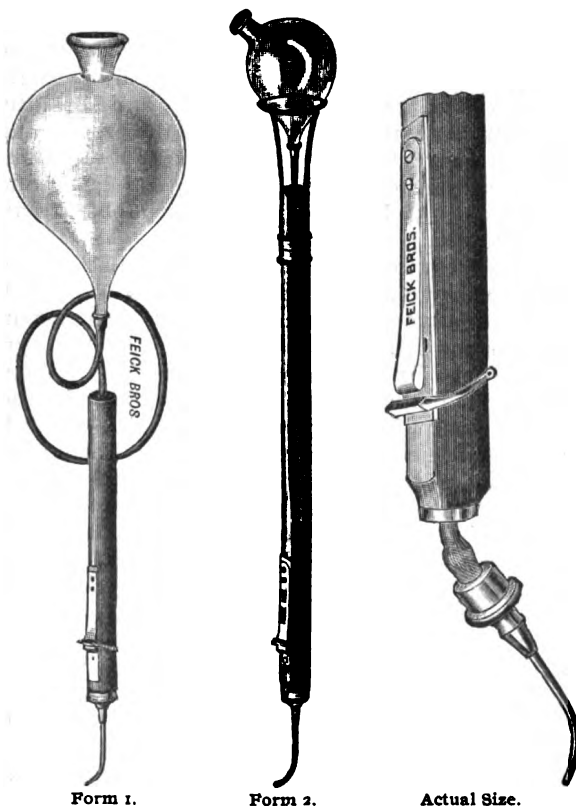
The visual acuity obtained was, from the standpoint of my own experience at least, unusually good, and this without the necessity of resorting (except in a few cases) to a secondary operation on the capsule. For example, $\frac{3}{8}$ and better was reached in about 50 per cent. of the cases without subsequent discussion. In a large proportion of those with visual acuity less than $\frac{3}{8}$, the defective sight was not due to opacity of the capsule, but to opacities of cornea and vitreous, and various pathological conditions in the fundus, such as atrophy of the optic nerve, choroidal disease, etc., all of which could be as accurately studied as if the lens had been removed in its capsule.

While it is true that good instruments are not the only requisites for a good operation, it is also emphatically true that, in ophthalmic surgery at least, good instruments are essential to the accomplishment of the best work, and the matter of irrigation forms no exception to the rule. I may be permitted to quote from the article referred to the following passage giving the tests to which a good syringe should respond: "1. It should be easily made aseptic and kept so. 2. It should always be ready for use or capable of being quickly made so. 3. It should be easily handled, and its movements readily and absolutely controlled with one hand alone, the other being free for other purposes. 4. Its ejecting force ought to be capable of being accurately estimated and regulated. 5. It should not throw bubbles of air into the eye."

These requirements I venture to think are met by the syringe which I present for your inspection to-day, and very imperfectly by any other instrument which I have seen described. Piston syringes (used by McKeown) are not easily kept aseptic, are often out of order, are not easily and safely manipulated, especially with one hand, and their ejecting force cannot be accurately gauged. Syringes made on the principle of the *compte-gouttes*, like De Wecker's, are not easily kept aseptic, the force of the current is not fully under control, it is easy with them to inject air, and moreover, as pointed out by Wicherkiewicz, they may exercise suction on the intraocular tissues. In my judgment, one of the best syringes is that of the last named author, and was described at the Heidelberg Congress in 1887. It consists of a pretty large glass bulb with a nozzle attached. The liquid is forced out by condensing the air over it by means of two rubber bags arranged exactly as in the double hand-ball atomizer for producing continuous spray. The only objections I make to this syringe are that it must be awkward to manipulate, and the force of the current must be an unknown quantity.

The syringe which I have used during the past year is a modification of that described in the paper referred to the beginning of this article. A small reservoir is fixed by a metal framework to

the upper end of a hollow hard rubber handle, through which runs a piece of rubber tubing attached at its upper end to the reservoir, while the lower is armed with a curved gold nozzle which fits firmly into the lower end of the handle and is removable at pleasure. The current, whose force depends on the height of the column of liquid, is retarded or stopped by pressing a short metal piston down upon the tubing with the index finger. The length of the whole apparatus is about eleven inches. In using the instrument no assistant is required, and for washing out cortical remains, the current is as strong as is consistent with safety. In hypopyon cases, however, we may require, and it is perfectly safe to use, a much stronger current; and for them I use the original form of the instrument with a longer bit of tubing and a larger reservoir, the latter being held by an assistant, or attached by a sliding clasp or ring to an upright post. It is safer to have two distinct instruments, one for cataract and the other for hypopyon cases.



Form 1.

Form 2.

Actual Size.

THE PRIX BÉHIER.—The Faculty of Medicine of Paris have authorized the acceptance of 30,000 francs, a legacy from Madame Béhier, the income of which is to go to furnish a biennial prize to be known as *Prix Béhier*, for work in medical pathology.

FEEDING THE YOUNG.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY O. H. PHELPS, M.D.,
OF BLOOMSBURY, CAL.

It goes without saying that a large majority of the children who die under the age of 5 years perish from diseases of the alimentary canal, and in large cities the rate of mortality is such that even Malthus would doubtless call a halt. That other causes than bad feeding come in for a share in the work of fatality we will not deny, neither will we discuss them in this paper. That bad feeding is the principal cause is fully borne out by the writer's observation and experience.

What is bad feeding? Mother's milk when the mother is herself badly fed all through the period of gestation and lactation; when her alimentary canal contains more or less fermenting material from excess of undigested hydrocarbons; and her whole dietary lacks tissue building material to fairly support her own body, much less that of her child. A hungry man is quarrelsome and discontented—see the Irish people fed on potatoes. An under-fed mother is weak, nervous and fretful, and the effect of this alone is often disastrous to her child. The writer recalls a case where the child several times nearly perished in convulsions caused by an explosion of anger in the mother who was badly fed, weak, and nervous. He advised weaning the child and the trouble ceased.

We will not discuss the proper feeding of the mother here, but would refer to a little book by Dr. E. Cutter, of New York, "Food in Motherhood," which we heartily commend for its treatment of this important subject.

A very common practice prevails among all classes of people of feeding solid food to infants 2 months old and upward. Sometimes they commence younger. That the digestive organs are not sufficiently developed to digest solid food is indicated by the lack of teeth to masticate with. And this may be taken as a safe guide as to the proper time to commence giving solid food. And if the child is bottle fed, sugar is usually added to the milk to assist in the alcoholic and acetic acid fermentation, and as a logical sequence of such outrageous feeding nature throws up the sponge and the doctor is called who often has to follow suit. Emaciation, colic, acrid dejections passing through the bowels, a burning seething liquid mass, only a little less irritating than molten lead.

How shall we feed to avoid all this?

First, don't give mother's milk, if it is bad milk. Don't ruin the child's digestion by persistent nursing when it is evident the mother cannot furnish good milk. Don't give impure cow's milk, and good or bad don't put sugar in it.

Don't put starchy food into the child's—shall I say yeast pan?—unless you want more yeast, more colic, more cholera infantum, more dead babies.

Pure cow's milk sterilized will usually be well borne, if the digestion has not previously been ruined. This failing give beef essence and pepsin.

The writer has usually had indifferent success with the so-called infant foods of the shops. A child that can digest the best of them can as well or better digest a gruel, made of milk slightly thickened with meal made from twice baked bread. The bread made of entire wheat flour, is best when it comes with the advantage of cheapness and known purity, which cannot always be said of commercially prepared infant foods. There are some nice formulas for taking out a portion of the caseine from cow's milk and otherwise making it as near like mother's milk as possible; all of which are good on paper, but often very impracticable to be carried out, among the majority of the clientele of the busy practitioner. Some cases from practice will illustrate some of the results of bad feeding and their treatment.

Case 1.—Hattie C., æt. 2 years. I was called February, 1878. Was met with a diagnosis from the mother, "Doctor, my little girl has worms and we want some medicine to remove them, our remedies have failed." Child anæmic, bowels bloated and constipated, weak, nervous and fretful; sleepless and occasional slight convulsions; breath sour and tongue coated. "What does she eat?" "Appetite poor, but eats of everything the family has: potato, turnip, of which she is especially fond, bread, coffee, etc." Treatment, a mild cathartic to unload the bowels. All solid food strictly prohibited, and lime water and milk *ad libitum*. Child improved rapidly and mother rejoiced at so rapid recovery. At a subsequent visit mother inquired when she could let the child eat everything. "Not till she is 5 years old." Counseled her to keep her on milk.

Was called again in April. Child in same condition as at first, and with a woeful face the mother declared the worms were at work again, and while relating the sad tale the little subject came in from the kitchen with the worms in both her hands—cold cooked turnip which she was eating with a zest. The former course was repeated, and the child made a good recovery.

Case 2.—Mrs. H., brought her infant of 3 months on a pillow from her home twenty miles away. At first sight it seemed almost moribund, and had hardly strength to make its pitiful wail audible. It was a bottle-fed baby, and plenty of sugar had been added to the milk and oatmeal gruel that it was fed on. The child was emaciated almost to the last degree, and in constant pain. Took the bottle often and would be quiet

for a while after feeding, or as long as the carbonic acid from the fermentation acted as a soporific. Bowels very loose, discharges green, foaming and acrid, making surface raw wherever in contact. Took away all food for eighteen hours and gave warm water and salicylate of soda, then gave sterilized milk from which most of the caseine had been removed, and lime water. On the fourth day gave in addition a little beef extract. In ten days the child was taken home much improved, and was soon able to digest plain milk. Sugar was prohibited. Child made rapid recovery, and when last seen, five months ago, was a fine vigorous boy.

Case 3.—Willie M., æt. 2 years. March, 1888, child pale and anæmic, tongue coated, breath sour, bowels loose with green, acrid discharges; had constant cough. Parents alarmed, thinking it had consumption. Could not take milk; was fed on oatmeal and sugar, potatoes and bacon, in fact anything its vitiated appetite craved. Treatment: positively prohibited all starchy foods; gave beef essence and pepsin for a week, then added sterilized milk and lime water. Cough soon ceased. Bowels became natural and digestion improved. Made rapid recovery.

These will suffice to illustrate some of the conditions brought on by bad feeding. Very little medicine is needed in most cases. When indicated pepsin and salicin may be given. It is also desirable to flush the colon with warm water frequently.

The proper food is milk up to 2 or 3 years of age, after that bread made from entire wheat flour (fine wheat flour is deprived of most of the tissue building material contained in wheat), milk, eggs, lean beef and mutton, fruit without sugar; in fact sugar not at all.

Such a course will give less work to the undertaker, dentist and doctor.

CLINICAL OBSERVATIONS ON VAGINAL TOTAL EXTIRPATION OF THE UTERUS FOR CANCER.

*Abstract of a paper read at the Forty-first Annual Meeting of the
American Medical Association, Nashville, Tenn., May, 1890.*

BY CHAS. A. L. REED, M.D.,
OF CINCINNATI, O.

In presenting this paper I desire to avoid all controversial questions as to the justifiability of vaginal extirpation of the uterus for cancer, but I shall proceed upon the presumption that, by a consensus of advanced professional opinion, it is looked upon as a fixed operation in surgical practice. It shall be my future purpose to discuss some clinical features of the cases requiring this operation, and to call attention to some features of technique.

My observations are based upon an experience

in eleven cases—nine recoveries and two deaths—but one of which can justly be called primary. The first case was operated upon Nov. 27, 1887, the last, April 28, 1890. There has been recurrence but in two cases; one that of a woman 48, who was operated upon Jan. 11, 1888, after sixteen months' previous duration of the disease, had recurrence after twenty months; the other, that of a woman aged 40, who was operated upon only six weeks ago, after six and a half months' previous duration of the disease, and in whom lateral infiltration of the broad ligaments was discovered only after the operation was begun. This case can not be justly called one of recurrence but an incomplete removal of the disease.

It has been my experience that one of the chief difficulties encountered in the successful management of these cases is the failure to get them for operation early. All of my cases have been above 32 years of age, and in nearly all of them I have discovered that delay in consulting a physician has occurred in consequence of the belief of the patient that her "irregularity of menstruation" as she generally calls it, implies only "change of life." When she finally consults a physician and is informed of the nature of the disease, she repels the suggestion with the remark that it can't be true because she has never suffered pain; and in many instances the physician himself is disconcerted by the observation. The idea that pain is an essential symptom of cancer of the uterus is promulgated in many of our text books and is firmly rooted in the general profession. The result is that in the absence of any complaint of pain medical men are often induced to indulge in fatal delay before making the examination which is necessary to establish the diagnosis. These cases, when examined are generally so easily made out, particularly when the aid of the microscope is invoked, that failure to diagnose them in time for successful operation can hardly occur.

The attainment of the highest success with this operation must come from early interference, a mastery of refined technique, and careful attention to the details of after treatment. A moment's thought can with propriety be given to the question of early operation. It is unnecessary to dwell at length upon the imperative importance of interference before the peri-uterine structures become involved, for I believe all operators recognize the fatality of the operation after the disease has passed beyond the limits of the uterine tissues proper. There is another consideration, however, which is not generally taken into account, viz., the induced anæmia. This state of the blood occurs from two causes, viz.: 1. Direct drain by uterine hæmorrhage, and (2) interference with the blood making function through inhibited vaso-motor activity, the result of a persistently depressed mental state. But from what-

ever causes induced, the depleted state of the circulation puts the patient in the worst possible condition to spare the comparatively small amount of blood lost and reduces her nervous resistance to such a point as to make her an easy prey to shock. One of my fatal cases died from shock within three hours after a short and almost bloodless extirpation, and I am forced to conclude from a not very extensive research that the majority of all cases that die under the perfected operation succumb, not to hæmorrhage, as was true but a few years ago, but to shock.

The preparatory treatment to which I subject my patients is designed chiefly to overcome this very condition. I endeavor to arrest the waste by the use of the vinegar douche or the vinegar tampon, and sometimes by curetting to the extent of removing the bleeding soft tissue. I at the same time keep the bowels gently open, and force the diet. This course persisted in for from a few days to a week or two places my patient in a reasonably good condition for the operation.

The operation itself requires but few instruments. The one that I particularly value is the Jones' speculum, a self-retaining perineal retractor, which enables one to operate with the patient in the much desired lithotomy position. A strong vulsellum forcep, a pair of pointed scissors slightly curved on the flat, and four ordinary Wells' large forceps complete the essential outfit. I also have at hand some silk and a pair of Hagedorn needles.

The best anæsthetic in these cases is chloroform, which is less likely than ether to cause vomiting and consequent extrusion of omentum and bowel.

The patient is now placed in the lithotomy position, the perineal retractor inserted, and the vagina carefully washed out with a 1 to 1,000 bichloride solution. The cervix is now seized with the vulsella and drawn well down, care being taken to note the vesical margin. With the scissors a dissection is rapidly made around the cervix, but only through the mucous membrane. This dissection is then carried into the peritoneal cavity anteriorly the tissues being generally separated by the finger. If the peritoneum persists in receding from the tip of the finger, as often happens, that membrane can be opened by a thrust of a pair of closed forceps. A similar dissection is then made posteriorly. These two dissections are now carried by the fingers to near the broad ligaments on either side. With the finger of my left hand introduced into the posterior incision and hooked over the right broad ligament that structure is drawn and clamped. I now release the uterus by dissection with the scissors on the right side, and draw it out of the vulva. The clamping of the left side is now a matter of convenience. If the appendages are within easy reach I bring them, too; if not, I leave them.

Many surgeons think it necessary to close the aperture but I think no one now endeavors to do so by sutures. In some cases in which I have feared protrusion of the bowel I have taken a small hæmostatic forcep and lifted up the posterior flap against the anterior raw surface and have packed it with antiseptic gauze. The dressing should, of course, be removed at the end of twelve hours, by which time agglutination will generally have taken place. I have consumed forty minutes in the operation and I have done it in eighteen minutes.

THE SCIENTIFIC ASPECTS OF MEDICAL HYPNOTISM, OR TREATMENT BY SUGGESTION.

Read before the Chicago Medico-Legal Society, October 4, 1890.

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(Concluded from page 708.)

I wish now to say a few words from my own knowledge of the subject. My experience, has been very limited in regard to hypnotic therapeutics, and it is only as a therapeutic measure that I have any knowledge of hypnotism at all.

Some thirty years ago, about the termination of the Sepoy mutiny in India, I visited the mesmeric hospital which had been established in Calcutta, by Dr. Esdaile, many years before my time, and witnessed a capital operation on a native who had been put into the mesmeric trance. On the following week I repeated my visit with the surgeon in charge of the hospital, and by his kindness and courtesy, I had the opportunity of performing two operations, an amputation of the thigh, and the removal of a scrotal tumor, which was found to weigh a little above fifty pounds. Both these operations were done under mesmerism. There were four other operations put down for that day, but the mesmerizer had not been able to mesmerize the subjects. One I remember was a fracture of the upper jaw, and another was a cancer of the breast; the other two I forget now what they were. These cases I was told would be operated under chloroform. When I revisited Calcutta after ten or twelve years of service in the N. W. provinces, I learned that the mesmeric hospital had been abolished, because of the uncertainty of producing anæsthesia in all cases by mesmerism.

Dr. W. B. Carpenter who had made a study of the mesmeric condition, and had also studied Braid's cases of hypnotism, had announced at this time his "expectant attention" theory, in explanation of these phenomena, "the dominant idea" as he put it "influencing and governing all other mental operations." Liebault had now commenced his treatment by suggestion in France,

and an occasional notice of his doings appeared in some of the French medical journals. In the meantime the requirements of the service had thrown me right into the midst of a very densely populated part of upper India. I enjoyed the fullest opportunity here of acquiring a considerable knowledge not only of the Eastern languages, but also of the methods of practice prevalent among the native Indian doctors. From my knowledge and standpoint of therapeutics it was puzzling at first to understand how these men attained results in their practice, that were very little if at all inferior to my own, seeing that their remedies for the most part were the crudest rubbish imaginable. The fact was that the self limited diseases and functional disturbances which formed perhaps sixty per cent. of all cases, came round all right through the agency of that mysterious "*vis medicatrix nature*," a *vis* that was no more explicable and intelligible than hypnotism itself. The efficacy of this *vis* became still more convincing when the cures were effected by charms, amulets, and incantations without the exhibition of any drugs whatever. Truly nothing is impossible to those who believe. When the *vis* is helped by suggestion, similar and even more remarkable cures may be expected among educated and intelligent patients. Look for instance at the work going on at the present day before our very eyes. New schemes and devices are adopted by ignorant, but by no means necessarily dishonest healers of disease, who practice suggestive hypnotism without knowing it to be such, but who ascribe the good results which may happen to follow their ministrations, to the help of God obtained specially through their prayer and favored mediation. Is it not the same thing with the high potency practitioners? Surely no one with common sense, and in his proper senses, can really be persuaded to accept it as a sober fact that the weaker you make a remedy, the stronger will be the effects; and yet a great many educated persons follow this method of treatment. As a matter of fact therefore more than half of these sick folks, whether in India, Egypt or Chicago, get well under a treatment that is chiefly applied directly to the mind rather than the body, and which indirectly influences and modifies the diseased condition itself through the mind, not forgetting of course the *vis nature*.

The physician in his practice deals with his case objectively, and the patient has to realize his symptoms, feelings, and impressions subjectively. The latter experiences his malaise and distressed feelings, and proceeds to the physician to have them removed. The educated scientific physician makes his physical and clinical examination; for as a man of learning and sense, he has first to make a careful diagnosis, that is ascertain exactly what is the matter, before he can decide upon what ought to be done. In a great many cases,

unfortunately, such decisions, are of a very important character, for to know what ought to be done, and to be able to do it, are two very different things. Two physicians may agree both as to the nature of the disease and the indication of treatment, and yet they are very liable to differ as to the particular means and remedies to be employed that would best meet the requirements of the case. The knowledge of disease derived from a study of symptoms, and with the interpretation of symptoms, *i.e.*, a rational knowledge of the diseased condition is the *science* of medicine; but the treatment of disease is not a science at all, but an *art*. A great deal in this line evidently depends on the personal equation. The more practiced, the more perfect; the greater the experience, the greater the skill—these are axioms of art, all art, every art. The best and most successful physician, therefore, is he who combines the learning from science and the wisdom from experience. His learning explains and interprets his case, and his wisdom suggests its treatment. Now as to the patient, he is guided entirely by his feelings. He never goes near the Doctor unless he “feels bad”—pains, aches, pyrexia, nausea, insomnia, anorexia, etc. If the patient's distressing feelings were relieved, he would cease to *feel bad*, though he may not be cured; and hypnosis or hypnotic suggestion can inhibit all these subjective disagreeables at once.

Perhaps the most masterful diagnostician of the past generation, and a thorough master of the natural history of disease was Sir William Withey Gull. He was a marvel among Londoners as a successful physician, and yet not a physician of my acquaintance was less able to write a respectable prescription, or could get along better with fewer remedies in his practical working pharmacopœia. His immense practice necessitated the appointment of two lieutenants who took charge of the more important personages among his wealthy patrons, after a careful diagnosis and prognosis had been made. The treatment under which the remarkable recoveries took place were mint water, syrup of ginger, and such like remedies *with strict attention to diet and hygienic management*. The assurance of the big man that the disease would terminate in such a manner and within such time under the proper and judicious treatment of my friend Dr. A. or Dr. B., (his lieutenants) created a mental impression of perfect security. From that moment everything went well, and in due course of time the patient was convalescent. Implicit trust in the physician is the basis of the psychic treatment, and works half the cure in most functional diseases.

Now, can we possibly get along in this world without accepting a thousand and one things on trust? That shrewd, far-seeing writer, De Tocqueville, in his famous work on America puts this idea in the following impressive sentence:

“There never was a philosopher, however great, but believed in a million things on the faith of others, and accepted a great many more facts than he had verified.” The mere suggestion, therefore, of a trusted physician acts like hypnotism to the simple minded, trusting patient, and he automatically obeys all that is enjoined, and realizes what is expected of him. Very susceptible patients are impressed in their waking moments, but light hypnosis or somnolence is the most convenient and suitable state for the generality of patients. Rarely is it necessary to induce the hypnotic condition, and as to hypnotic somnambulism, I have never seen a case.

The cases in which I have found suggestion to act most satisfactorily, requiring but one or two sittings, are those in which menstrual irregularities constitute the most prominent features. I shall state one or two cases. A. B., 35 years old, married, mother of one child, had never been regular during the twenty years she had menstruated. The intervals were two weeks, six weeks, two, three or four months. She had last menstruated on June 3, 1889, when she saw me professionally on the 14th. I placed a piece of solid aluminium in her hands and requested her to look at it steadily. “Now I am going to put you to sleep and impress your nervous system, so that when you wake up you will be perfectly cured.” Her imagination was taken by surprise, and before she realized her situation, I told her she was already looking sleepy, the eyelids were growing heavy and sleepiness would soon overtake her. “Yield to the influence, close your eyes, sleep,” and in just one minute she was hypnotized. “Now pay attention to what I say. On the 1st of July you will be unwell at midnight, and on the 2d of July you will come to my office to tell me this, and every month on the night of the 28th or morning of the 29th day, you will regularly menstruate without fail. Do you hear what I say?” “I do.” “Repeat it.” She repeats. “Realize it.” She is silent. “Do you realize it?” “I do.” “You will feel no trouble or discomfort when you awake. “Do you realize it?” “I do.” “You will remember nothing when you awake.” “Awake.” On July 2 this American lady of education and intelligence was seated in my office awaiting my arrival. “What is it?” I ask. “Well, I came to tell you, doctor, that I have come round all right just to the month, the very first time in my life.” “It is a funny thing that you should come to tell me this. If you are all right, you don't want to see a doctor. Why have you come to tell me this?” Well, she was so well pleased with what had happened that—that—She fumbled about somewhat embarrassed, asked me to excuse her, and left. I called her back. “Should you become irregular again, don't fail to come and tell me.” She has been regular ever since. Eight other cases, almost

similar, were hypnotized more than once, but all with the same result.

C. D., unmarried, of American descent, anæmic, suffers from amenorrhœa, called with her mother on June 20, 1889. She suffered from severe pelvic pains for four months after receiving a chill, and has had very indifferent health ever since; has taken Warner's chalybeate pills three times a day for three months without improvement. With her sanction and her mother's permission she was hypnotized in six minutes, and told that she would menstruate in six days. On the 27th of June she menstruated, but she skipped the month of July and was again brought to me on the 4th of August. She was hypnotized in three minutes, and was requested to report on the 23d of August that the time had come on the day before, and she was assured that every twenty-eight or twenty-nine days thereafter she would menstruate regularly. She appeared on the 23d of August to say that she had been unwell the night before. She has been regular ever since.

Gastric troubles are very amenable to hypnotic treatment in conjunction with such remedies as neutralize the excess of acid in the secretions, or a little local electricity, and careful attention to diet; suggestion under hypnosis being well calculated to affect the subjective phenomena of the underlying neuroses, whether structural or functional, ataxic or neurasthenic.

As the dyspeptic cases were at the same time under dietetic or hygienic treatment, and as careful observance of regimen alone is calculated to produce good results in these diseases without the aid of hypnotism, I avoid entering into any particulars regarding them; but I shall mention in passing that under hypnotic suggestion the feelings of distress, pain and nausea were promptly relieved, and the sufferers made comfortable at once.

I have had three cases of dipsomania, two of which have been treated successfully so far, and one was a failure. This failure, however, was due to the fact that the patient was intoxicated during the treatment, and I am of opinion that he was not capable at the time of either fixing his attention or of receiving any suggestion.

A few cases of constipation, neuralgia, and rheumatic pains have made decided improvement under suggestive treatment.

Two or three cases of sexual impotency were very successfully treated by hypnotic suggestion. One in particular was not only remarkable but quite unique, even in the records of hypnotism. Suffice it to say that I have had an experience of nearly fifty cases, and that I have been more or less successful with them all. There is now, therefore, not the least doubt in my own mind that of all the means employed to cure disease through the effects of the imagination,³ hypnotism is by far the most powerful. Hypnotism

is an established fact; but the question as to how far it is useful in therapeutics can be answered satisfactorily only after a great deal of investigation. The attitude of the profession towards the employment of this resource is not very creditable to medicine as a progressive science. Dr. August Voisin, physician to the Salpêtrière, discussed the treatment of neuroses by hypnotic suggestion at the last August meeting of the British Medical Association. He concurred with Braid that the hypnotic state originated in the nervous system of the hypnotized person; he also stated that hypnotism was in his experience useful when it was possible to make use only of suggestion. He then enumerated a number of cases of hallucinations, delusions, disturbances of special and general sensation, suicidal ideas, acute and furious mania, dipsomania and morphinomania, obstinate cases of onanism, etc., which had been treated by him and cured under hypnotic suggestion, and concluded by describing how he had completely transformed the depraved habits of thought in the young, and had brought them to love the good, whereas they had formerly loved the evil.

In the discussion which followed an objector declared that his attitude of mind towards the paper was simply one of amazement. There was something, he said, that cured mania, banished hallucinations, cured love of drink and morphia, stopped masturbation, improved the memory, made imbeciles wise, and bad folks good; moreover, it cured amenorrhœa, and the patient menstruated as directed. It resembled nothing so much as the waving of a conjuror's wand, and saying to the disease, "Begone." Moreover, in nine-tenths of the cases the cure was permanent. If all this were true, their vocation was gone, and they must seek some other profession. Dr. Voisin must not deem the English objectors as disrespectful if they were a little incredulous as to these wonderful results. It might be there was something in the vivid Gallic nature that the English did not possess, or something in Dr. Voisin's method that the English did not know, and more to the same effect, entirely discrediting Voisin's narrative of facts, and denouncing him as a fraud because the objector did not see how these things could possibly be; or to put it in the most charitable light he believed Voisin was a self-deluded enthusiast, and although sincere was entirely mistaken in reporting a pack of delusions as facts. Now is this the scientific method? Is this the way to establish the truth as to any natural phenomenon? Why this rooted disinclination

³It is not pretended "that suggestion acts directly upon the diseased organ to suppress vascular congestion, resolve inflammatory exudation, and restore the destroyed elements of the parenchyma. What drug in the *materia medica* is capable of creating such a direct curative activity? Diseases are cured, when they can be cured, by their natural biological evolution. The therapeutic agents which we use are only functional medicaments—suggestion, also, is a powerful functional medicament."—BERNHEIM.

to accept the facts of hypnotism? And why should the knowledge of these truths excite amazement? Simply because they are new and unfamiliar? Partly, but chiefly because charlatans and quacks who have misused them for purposes of gain have surrounded them with supernatural claims which science cannot recognize. These are ridiculous objections. New things, and new ways of doing old things we find every day in these active times full of discoveries of new facts in nature, and inventions in art, but when these facts become familiar, and when these inventions are known and understood, they cease to excite amazement. That a new way in practice may alter in some manner our time-honored vocation is quite possible; but is it reasonable to oppose the recognition of a fact simply because it is likely to occasion inconvenience to us in our routine habits of business, or disturb our traditional views and opinions? "I don't like it," or "I don't believe in it," and "I won't have it," will scarcely produce an impression on the phenomena of nature. Not a single fact can be altered or modified by either belief or disbelief. The facts will continue to be facts just the same. The question simply is, "Is it a fact?" To denounce the statement of a fact without investigation and inquiry simply because one dislikes it, is the same kind of thing as to condemn a man to death without a trial simply because you hate him. Such a proceeding would in the first instance be unscientific, in the second unjust, to say the least. If you have an ardent love for the truth, you have plenty of means of searching for it; but first investigate before you opine. If you don't know, either keep silent or try and learn.

It is not so very long ago that a large section of the community were struck with amazement at two persons being able to converse one hundred miles apart, their voices being made to travel to and fro along a wire. "Why, how could such a thing be?" they asked. There is no amazement now, for every one knows the fact; though even to-day not one person in a hundred thousand can explain it understandingly to himself excepting as a something that is produced somehow by electricity. If anyone would like to understand how the "halloing" is done in a telephone, he must first study the laws of electricity, and next learn the principles on which the telephone is constructed; but he can easily satisfy himself that it can be done by going to a telephone and trying it himself. The same process is applicable to hypnotism and to every other fact. Learn the fact of hypnotism by seeing it, then try it yourself. If you want to know more, study the works of the physiologists and psychologists who have devoted their best talents to its explanation. And if you are still more curiously disposed and possess the necessary qualifications, go ahead and add as much to our information and inter-

pretation of hypnotic phenomena as you can, by making original investigations; for the field is wide enough to occupy many generations of inquirers without the least fear of exhausting the subject.

Hypnotism is a fact which is sure to be more generally appreciated the better it is known and understood, and the earnestness and ability with which it has been prosecuted give fair promise of rich results in the future. It will render great service to the *Physiologist*, perhaps, by clearing up our knowledge of the mechanism of reflex action, and inhibitory action, the extent of associated sensory and motor functioning, the influence of vaso-motor stimulation on secretion and excretion, the association of spinal with cerebral impulses, the character of automatic action, of unconscious cerebration, and a thousand other facts now more or less mysterious and unintelligible. It will render great service to the *Therapeutist* by indicating the true physiological action of drugs, and removing the associated influence of subjective phenomena as a modifying agent in the production of therapeutical effects. It will be of considerable interest to the *Pathologist* by enabling him to appreciate the changes producible in the fecundity and alterability of microorganisms by altering the character of their pabulum, an alteration which might possibly be effected through the vaso-motor system influencing nutrition. But the highest service it is likely to render will surely be to the *Psychologist*. The so-called philosopher of olden times had for many thousand years tried, and tried in vain, to study the functions of the brain by an introspective examination of his own mind. Metaphysics as a science have long ago been pronounced impossible. By hypnotic suggestion the psychologist of the future will in one single year learn more of the mind and the mechanism of its so-called faculties than the highest talent of the world had been able to ascertain in two thousand years. It is believed that it may help towards the objective study of consciousness itself, to the forming of a clear notion of mental diseases, and to the employment of a more effective method of treating the insane.

It will be noticed from all that I have said, that by hypnotism I understand the influence of suggestion on the willing and susceptible mind, whether this suggestion be offered under the names and processes of mesmerism, electrobiology, animal magnetism, or produced by hypnotism by the method of Braid. It is not even necessary that the sleeping illusion should be induced in order to evolve phenomena under suggestion. Hypnotism is therefore a great power, and is consequently capable of being abused. The forensic aspect of hypnotism where any amount of crime may be perpetrated through the agency of helpless and irresponsible victims is much too ex-

tensive and important a subject and can receive no more than just a passing mention in this sketchy paper. There are some erroneous and exaggerated notions, however, entertained regarding this danger. The fact is that no one *can* be hypnotized against his will, and a firm determination to oppose the influence of suggestion is the best safeguard against all susceptibility to hypnosis. Weak minded people under religious emotions can, however, be wrecked and ruined without warning by insane enthusiasts who capture the attention, and play upon the feelings of ardent devotees at religious revivals. These meetings should be prohibited by stringent legislation;³ and however valuable hypnotism may be to the psychological and scientific physician, in the hands of the ignorant and sensational exhibitor, it is calculated to do nothing but harm and mischief.

One word more and I am through. Will hypnotism ever become popular in general practice? I think not. It will always remain in the hands of specialists, and it is right that it should. A special training is necessary to make it impossible for the hypnotizer to do the least amount of harm in any case brought to him for treatment. It takes too much time to make it popular among busy and active practitioners; and it will always be felt as a serious inconvenience by patients to put themselves into the proper frame of mind, and then allow themselves to be sent to sleep in order to receive treatment for common ailments. Further, any unconscious resistance on their part will operate as an auto-suggestion against the suggestion of the operator, and in this way either prolong the sittings indefinitely before the sleep illusion is induced, or render the induction of the hypnotic state altogether impossible. It has its uses and its drawbacks; but in suitable cases and in proper hands I consider it a valuable therapeutic agent.

I feel that I have done scant justice to this important and highly interesting subject, and I am much obliged to you, gentlemen, for the patience and attention with which you have listened to this meagre outline.

(For discussion see Society Proceedings.)

DIPLOMAS IN COLORADO.—The Colorado State Board of Health, after July 1, 1893, will not accept the diplomas of any school which does not have an obligatory three years' course of instruction of five months each, in three different years.

³ The brutal practice of shocking and jarring hystero-epileptics by sudden flashes of lime-light, and the striking of gongs, should also be stopped by legislation. This kind of thing can hardly be called "therapeutical." Imagine an inhuman experimenter exhibiting toxic doses of strychnine to a case of traumatic tetanus, and making a public show of the contortions and agonies of the wretched sufferer. In both these cases we should have valuable remedies misapplied and prostituted for sensational purposes regardless of the misery inflicted on the unfortunate victims. From these cases no man of sense would form his opinion of the proper uses of hypnotism and strychnine.

REMOVAL OF TONSILLAR HYPERTROPHY BY ELECTRO-CAUTERY DISSECTION.

Read before the Chicago Medical Society, October 6, 1890.

BY EDWIN PYNCHON, M.D.,

INSTRUCTOR IN RHINOLOGY AND LARYNGOLOGY IN THE CHICAGO POST-GRADUATE MEDICAL SCHOOL, AND LECTURER ON DISEASES OF THE NOSE AND THROAT AND THEIR RELATIONSHIP TO THE TEETH AT THE U. S. DENTAL COLLEGE OF CHICAGO.

The anatomy and physiology of the tonsil I will not attempt in this paper to consider except with brevity. As to size, in the thoroughly normal condition, its presence is hardly perceptible. As usually described in treatises on anatomy it would appear that a moderate degree of hypertrophy has been accepted as the type of perfection. As far back as medical history goes allusions are to be met with concerning the enlarged tonsil, and the means adopted in the attempt at its removal.

The physiology of the tonsil is not thoroughly understood. It has been supposed to be of assistance in lubricating and guiding the bolus of food being swallowed. In civilized life it seems to be devoid of practical use and appears to be but rudimentary, and as a reminder of a something which in prehistoric days may have been required, when man lived on fruits and nuts, and barks of trees, before the art of cooking was discovered. One trite observer has remarked that "the principal use of the tonsil was to absorb poisons." While, in common with trite remarks generally, this one may possess the feature of exaggeration, still I believe it in the main to be worthy of attention. For example, but note the effect, in cases of diphtheria, when the tonsils are prominent, and the increased severity and fatality therefrom. Enlarged tonsils seem most often to result from exposure and debilitating influences, and from surroundings of unfavorable hygienic condition.

The object of this paper is to call attention to a condition of hypertrophy of the faucial tonsils with which I frequently meet both in clinical and private practice. I do not allude to the usual and well recognized enlarged tonsil of the hyperplastic variety which is so frequently seen, particularly in children, which is resistant to the touch and which, owing to its large size, occludes the faucial passage and materially interferes with both respiration and drainage. Such enlarged tonsils are, I believe, always removed by the educated physician, providing the consent of those closely related can be obtained, and the necessity for the removal of which has been generally conceded by the medical profession. On the contrary, I allude to a condition of the gland wherein it is hypertrophied, and therefore diseased, though the enlargement may be but slight; a condition wherein the hypertrophy is more of the follicles than of the gland, and wherein the tissue, while

nodular, is yielding to the touch. According to Sajous, "the increased volume of the hypertrophied tonsil may be hardly noticeable" (p. 287). By the ordinary examination with the use of the tongue depressor it may be difficult to see and, in fact, may even escape the attention of the observer, though if the tongue depressor be forced sufficiently far back, even to the touching of the epiglottis if necessary, the patient can be made to gag, when, by the contraction of the constrictors pharyngeus, these diseased tonsils will be thrown out from between the pillars, and in aggravated cases may be made to meet. When so examined the lacunæ will be observed to be large, and by slight pressure upon the bodies there will be seen to exude from these openings a cheesy secretion which is not only profuse, but is oftentimes of a disagreeable odor, and consists of cholesterin, débris from broken down follicular glands, epithelium, pus corpuscles and other waste matter. When profuse, I believe there is always a tendency towards decomposition. I have observed this secretion to be much more profuse and disagreeable in case of the small hypertrophied tonsil described in this paper than in case of the very much enlarged tonsil. When such condition of the tonsil exists as I am describing, there will be found associated therewith other conditions, some or all of which may at times be present. The saliva in the back part of the mouth is more profuse and frothy than in a normal throat. There is generally present a condition of chronic pharyngitis, and there is frequently given a history of previous attacks of quinsy, and the patient acknowledges himself to be the possessor of a throat abnormally sensitive, which is easily affected by exposure during inclement weather. Unless the patient has been accustomed to pharyngeal and laryngeal manipulations or to the use of gargles or post-nasal sprays, the fauces will be found to be more sensitive than normal, so much so that the induction of gagging previously alluded to will, in fact, be too easily attained, and in many cases, at first, the mere pointing of the tongue depressor at the opened mouth causing nausea. There will generally be given a history of post-nasal catarrh with its usual train of symptoms, including at times a diminution in acuteness of hearing. There will often be observed the coated tongue and tainted breath associated with other symptoms of indigestion. In fact, since I have had my attention particularly drawn to the described diseased condition of the tonsil, I have not seen a patient so affected whose tongue was not somewhat coated and who did not give some indication of dyspepsia. I believe that in the swallowing of catarrhal and diseased tonsillar secretions we have a frequent cause of chronic gastric catarrh.

If the patient is one who sings or who is accustomed to prolonged use of the voice as, for

example, a clergyman, a lawyer or an auctioneer, by inquiry it will be learned that after vocal exertion there comes a condition of huskiness of the voice or even pronounced hoarseness. If the patient be a vocalist and the diseased tonsils be not extremely small, it will be elicited that in the execution of the notes of high register there is a consciousness of greater muscular exertion and strain being required than would seem to be natural.

There is frequently given a history of cough with expectoration, particularly in the morning, of thick mucus from the larynx, often in the form of a small, hard globule which is of bad smell when compressed. There is generally a sensation of roughness of the throat which is in part attributable to the concomitant pharyngitis.

This condition of the tonsils has been by some medical gentlemen appreciated, and means have from time to time been employed for their eradication. Owing to their small size and the difficulty or impossibility of grasping them, the usual operation of tonsillotomy is not available. The process of igni-puncture has been suggested and is practiced by many, which operation consists of entering into the several lacunæ one after the other, and generally not more than three or four at one séance, a cold platinum cautery point and then, after heating the same, cause it to burn its way out. This process is repeated until all of the large follicles have been destroyed, the expectation being that after such partial cauterization as described the remainder of the gland will pass away by absorption. The results have been claimed to be satisfactory, though generally a very ragged and bad appearing surface remains.

From my own experience with this operation and from my observation of the experience of others, I am convinced that generally the expectation is not realized. In the case of young children, after a partial tonsillotomy the remainder of the gland is often found to absorb, but in the condition which I have in mind, and which from its nature is most often found in adults, there is a denseness of the tissue which precludes the expectation of even partial absorption. I frequently meet with cases in patients 30, 40 and even 50 years of age. While the tendency in the adult is towards the absorption of hypertrophied tonsillar tissue, I do not believe that such absorption is often complete. On theoretical grounds the further objection to electro-puncture can be made that, while the larger and more prominent follicles are destroyed, there yet remain many smaller follicles which in time may become large, and which even prior to such enlargement are constantly giving forth a secretion which cannot be otherwise than the gland itself, to wit: diseased. Another patent objection is that the ragged surface remaining is a necessary source of irritation by the arresting of particles of food being swal-

lowed, and is furthermore, owing to its roughness, an unfavorable surface for the best production of vocalized sounds.

Another means of eradicating small diseased tonsils is to grasp them with some form of vulsellum forceps, encircle them with a galvano-cautery snare and thus attempt their removal. While such operation may in certain cases prove more satisfactory than the former operation, it is nevertheless not a thorough success. Owing to the elongated and flattened shape of the diseased tissue the difficulties met with are apparent, and while a portion thereof may be so removed, we are justified in assuming, as before, that the leaving undisturbed of a considerable portion of the abnormal tissue is contraindicated. Another of the physical objections to this mode of procedure is that in certain cases, owing to previous follicular inflammations with resulting suppurations, the projecting surface of the gland is not a favorable tissue for being so grasped as, while the base may be indurated, the surface is soft and easily torn. Another method which has been employed is the dissecting out of the offending tonsil by means of blunt-pointed and curved bistouries. While this method would seem to promise efficiency if prosecuted to a sufficient degree, it is, for obvious reasons, very seldom adopted.

Practitioners generally, even when they have recognized this condition described, have not been disposed to associate therewith the several symptoms which I have enumerated, and too often, realizing the obstacles to be met with in the removal of a gland so well imbedded and carefully surrounded, have preferred to prescribe placebo gargles or astringent applications which can only allay temporary irritation and never produce radical cure. In this condition, when the throat is in a passive state, I generally find the tonsil about flush with the pillars and often quite thoroughly adherent thereto both anteriorly and posteriorly and, furthermore, not infrequently associated with a condition of hypertrophy and infiltration of the pillars. The presence of such condition may in a pronounced case detract two or more cubic inches from the space of the mouth, which can be readily believed to have a material influence upon the voice. Furthermore, during vocalization the pillars, which are normally parallel and should so remain, are held apart at their middles by the presence of an indurated and unyielding mass which additionally fills a space which in the natural condition is an inverted trough, rendering undoubted help in the formation of certain of the voice sounds.

Believing that in such cases the indication is to thoroughly and completely remove the diseased tissue, and finding that the ways and methods heretofore known and as described were inefficient, after some thought and experiment I devised a method of securing the desired result with

safety and efficiency, and have since put it in practice on many occasions. It will afford me pleasure to describe this operation in detail, so that any of my *confrères* who may so elect can practice the same.

With the patient possessing a hypersensitive throat I first prescribe a course of treatment to reduce the sensitiveness thereof, which consists in the half-hourly employment of a gargle of potassium chloras accompanied by the frequent introduction into the mouth of the handle of a teaspoon, which is to be used alternately as a tongue depressor and as a soft palate elevator. In this way, generally in two weeks or so the quite sensitive throat becomes tolerant to the presence of instruments. At an appointed time I apply a solution of cocaine 10 per cent. with phenol 5 per cent., which produces some anaesthetic effect, and by its bitterness tends to detract the patient's attention from the pain incidental to the operation. I employ three electrode points, two being bent at right angles to the shaft, so that by reversing the electrode I can have a point bent either above, below, to the right or to the left as I may require. The third electrode point is very slightly curved and is likewise reversible. They are all made of No. 24 guage platinum wire and will heat quickly. I use a current about 50 per cent. stronger than is required to produce a white heat of the electrode in the open air, so the most brief pressure on the contact button will thoroughly heat the point, and if left in contact for more than two seconds of time *in the open air* would probably produce fusion thereof. Such a point and current as described will, in use in the tissue, give the least pain with the best and most rapid results. During the operation the tongue depressor must be employed, and it occupies the patient's mind to have that instrument in charge. My first step is to dissect the tonsil away from its attachments to the pillars, generally entering the appropriate point cold, heating and burning out. For the upper portion of the pillars I use the point bent downwards and work in that direction. For the lower portion of the pillars I sometimes reverse the same point and work upwards. The point being entered cold and serving as a blunt tenaculum, the tonsil is lifted out and towards the median line, when the point is heated and burns its way out. Only a little is done at a time. The side attachments having been released, I next grasp the tonsil near its upper end with a suitable forceps, lift the same forward, and with the heated bent point dissect the tonsil little by little from its attachment below to the pharyngeal aponeurosis. The operation is of course somewhat tedious, and requires from fifteen minutes to possibly one hour's time. From five to twenty seconds' work is done at each attack, the remainder of the minute being lost by the patient resting. Unless the patient is restless, so that the electrode is caused to tear instead of

burn through the tissue, there is little or no hæmorrhage. I have in some cases lost less than twenty drops of blood, and in no case has the hæmorrhage probably exceeded one ounce. The most difficult part of the operation is in getting the upper end of the tonsil loosened. It is then very easy until the lower end is reached, by which time the loosened portion drops over on to the tongue, producing nausea. The principal points in the operation consist, firstly, in never operating while there is present a condition of acute inflammation; secondly, in constantly lifting the tonsil forward towards the median line while working; and lastly, in working slowly and doing but little at each stroke with a thoroughly heated point, which will always burn its way through the band of tissue engaged. I have also with satisfaction done this operation as described, for the removal of the indurated base of a tonsil remaining after a tonsillotomy. Immediately after the operation I have latterly been making a thorough application of "Eisen-glycerine" (a German preparation much used in Vienna, and consisting of equal parts of tinct. ferri chlor. and glycerine), and have found it to be efficient in tending to prevent as marked inflammatory reaction as frequently occurred prior to my adopting its use. I repeat this application daily for the first week, providing the patient calls at the office.

Succeeding the operation for a few days the throat is quite sore, which condition I combat by directing the frequent use as a gargle of a saturated solution of the bicarbonate of sodium, and for the first two or three nights the employment of the wet pack about the neck. If in twenty-four hours after the operation the inflammation has become quite pronounced and annoying, I prescribe a mixture composed of tr. of iron and chlorate of potash in glycerine—one dose containing from 6 to 12 minims of the iron and about 4 grs. of the potash, every two hours, and have in some cases prescribed this at the start as a prophylactic with apparent benefit; and I might remark here incidentally that this mixture also has a beneficial influence upon the gastric catarrh, clearing the tongue and improving the appetite.

After the first few days, in place of the gargle of soda I substitute a saturated solution of potassium chloras, and have in some cases, where this was disagreeable to the patient, given instead a gargle of diluted tinct. of myrrh of the strength of about $\frac{1}{2}$ drachm of the tincture to the ounce of water. The amount of annoyance produced by the operation differs in different cases, being influenced in a measure by the size of the remaining wound, though to my mind it is more dependent upon the idiosyncrasy of the patient. In the several cases in which I have performed this operation I have not had reported any marked febrile disturbance, though in several cases the local inflammation has been considerable.

At a given séance but one tonsil should be removed, and generally about two weeks should intervene between operations. In a few cases, owing to the restlessness of the patient, the tonsil being operated upon was not completely removed at the first sitting. In such cases the operation was renewed at a later period, after the throat had become thoroughly healed. I have generally found the first operation to be of more annoyance to the patient than have been the one or more succeeding operations. As a result of this operation I have found that the post-nasal catarrh is almost invariably benefited and, also, that when in connection with the post-nasal catarrh there is a slight degree of middle ear deafness, the acuteness of hearing has been intensified. I also find the condition of pharyngitis improved, and in cases wherein there is neither stenosis of the nasal passages nor a condition of atrophic rhinitis, there follows an improvement in the dyspeptic symptoms with a general improvement of the health. In singing the voice is found to have become clearer and more powerful in the high notes, and is not succeeded by hoarseness as before. Furthermore, the possibility of future attacks of tonsillitis is averted.

While the operation is not pleasant to undergo, the general report is that the pain is not so severe as would be expected, and that the most disagreeable feature thereof is the difficulty of combating the tendency to nausea. No patient as yet, after the first operation when both glands were diseased, as is generally the case, has failed to solicit the removal of the remaining tonsil. Between operations after the first tonsil has been removed, the general report is that there is a sensation of more room and comfort on the side which has been operated upon when compared with the opposite side. While to the uninitiated this operation might seem quite heroic, it is certainly not productive of one-half the annoyance and pain that is given in following the treatment by caustics, as chromic acid or London paste, both of which have been employed.

In this or any other operation upon the tonsil, owing to its proximity to the carotids, it is wise to consider the possibility of serious hæmorrhage. The approximate distance from the tonsil to the external carotid is three-fourths of an inch, and to the internal carotid is one-half inch, which distances may be materially increased by traction on the tonsil, owing to the free supply of loose cellular tissue posterior thereto. Bleeding after tonsillotomy is more to be feared from wounding the smaller arteries in that region, particularly the tonsillar or ascending pharyngeal. I personally do not regard the danger from hæmorrhage in the operation described to be anywhere near as great as when the tonsillotome is employed, which from its nature can only be employed when the gland is pronouncedly hypertrophied and projecting.

Furthermore, in the small diseased tonsil described for the treatment of which I advise electro-cautery dissection, owing to its small size the blood supply is not so great as in case of the more hypertrophied tonsil, and the small vessels, when divided by the hot point, are sealed. The operation completed, the wound is protected by a seared surface which it would seem would be far less likely to permit of the entrance or absorption of anything pernicious, than in case of the open wound after tonsillotomy. From four to six days after the operation, as the slough begins to separate, there is a slight secondary hæmorrhage, the amount of which is largely dependent upon the vigor with which gargles have been employed.

In acute parenchymatous tonsillitis, when prompt escape is not given to the imprisoned pus, it is prone to burrow in the adjacent cellular tissue and, when neglected, has produced perforation of a large vessel, followed with profound hæmorrhage. Such a result I do not believe to be possible from the operation which I have described, as the remaining wound is large and open, insuring good drainage and precluding the possibility of such dangerous result. In healing by granulation there occurs a filling up of any small or irregular depressions resulting from the operation, so as to give an even surface, and I have never as yet seen any cicatricial contractions resulting therefrom.

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MEDICAL PROGRESS.

SOME PRACTICAL POINTS IN THE TREATMENT OF SYPHILIS.—DR. R. W. TAYLOR thinks it impossible to over-estimate the great advance made in the treatment of this disease by establishing the fact that small doses given over long periods was more radically curative than the old time heroic dosage, or of the three to six months' courses. He then refers to the advantage of the hypodermic method of administration. The hope of aborting the disease gives rise to two methods, —the first, that of excision of the chancre; and the second, by active mercurial dosage during the primary period of the disease. Both methods have been found useless. He does not begin the mercurial treatment until the beginning of the secondary stage. The three systems of treating syphilis now in vogue are as follows: The expectant, or symptomatic; the continuous, or so-called tonic treatment; and the treatment by interrupted courses. He disapproves both of the expectant and the continuous treatment, and has found that the interrupted but carefully regulated courses of mercury alone at first, and of mercury and iodide of potassium later on, is the one most preferable, most satisfactory and practicable to both phy-

sician and patient, and the one by means of which we may almost positively promise a cure to any one with ordinary health who will systematically submit to and follow it up. The systematic treatment of the disease pre-supposes a careful hygiene and an orderly and well-rounded life during its continuance. The preparations of mercury he recommends are the green iodide and the tannate of mercury. He thinks that the bichloride should only be used hypodermically. The dose of the proto-iodide of mercury should be from one-fourth, or one-fifth to one-third, or half a grain. This may be given from three to five times daily. The dose of the tannate of mercury is from one-half to a grain. During the early secondary period is the most important time for giving the remedy, which should be continued from three to six months if necessary. In most cases, at the end of three months, during which the remedy should be taken quite steadily, the patient's condition will be found to be so reassuring that a stoppage of the dose may be allowed for one, two, or even three weeks. The next course may last for but two or three and a half months, when four weeks' freedom may be granted from drug taking. During the second year's treatment, iodide of potassium is combined with mercury. He prefers mercurial inunctions as an adjuvant reserve and emergency resource. The early rashes of syphilis are best treated by mercurial inunctions, both during their active and chronic stages. Thus, if the erythematous syphilide is exceptionally severe and persistent, it is well to leave off internal pill dosage and use mercurial inunctions. When the eruption has disappeared the pills are resumed, and the ointment discontinued. Inunctions should also be made over enlarged lymphatic glands, vessels, and blood-vessels when they are abnormally hyperplastic. A similar treatment is indicated in early papular syphilides. Regional inunctions are also recommended in early and late meningeal, cerebral, and cephalalgic symptoms. In cases of syphilides with much pustulation and encrustation, the common antiseptic remedies are better, for a time, than mercurial inunctions, as they are due to microbial complications. Local nodules, mucous patches, and condylomata should be cleansed and dusted with calomel. For hypodermic use a pure watery solution of the bichloride of mercury is considered the best. Solutions containing one-twelfth and one eighth of a grain dissolved in ten drops of water may be taken as standard doses. These injections will cause the rapid subsidence of specific lymphatic swellings, and of localized and regional eruptions. Cephalalgias may also be so treated. Where mercury taken by the mouth acted as a general depressant, hypodermic injections have relieved the condition. Osseous, bursal, fascial and articular lesions of syphilis, particularly the earlier ones,

are often much benefited by sublimate injections. It is well at the same time to give iodide of potassium in full and increasing doses. Fumigations are often of much use in stubborn localized and even general eruptions, particularly in the chronic scaly stage of early and late eruptions, and also in almost all cases of pustular, ulcerative, and serpiginous syphilides.—*Medical News*.

APPENDICITIS.—At a meeting of the Medico-Chirurgical Society of Montreal, DR. GEORGE ARMSTRONG read a paper upon this subject, dealing especially with the important question as to the time at which an operation should be performed. He urged upon all practitioners to bring forward and publish their cases, both successful and unsuccessful, in order that we might be placed in a position to decide upon an established procedure, and he assumed that on the following points all were agreed: 1. That the cæcum and appendix were entirely surrounded by serous membrane and were intraperitoneal. 2. Primary infiltration of cellular tissue in the right iliac fossa was unknown. 3. There was no evidence of the existence of an infiltration of the walls of the cæcum other than that caused by a catarrhal infiltration or ulceration of its mucous membrane, the most common forms of ulcer being stercoral, typhoid, tubercular, and perhaps syphilitic. 4. The symptoms of a catarrhal infiltration of the mucous membrane of the cæcum were those of a colitis rather than typhilitis, and ulceration of the cæcum did not give rise to symptoms of typhilitis unless the peritoneal covering became involved.

The reader dwelt upon the importance of early recognition of the disease, and upon the fact that every one of the symptoms might be very slight. A little pain on pressure might be the only symptom present to indicate the presence of a pint of stinking pus. A case was cited, that of a girl of 21, in whom the symptoms had been very mild and there had been apparent improvement until the fifth day of the illness, when symptoms of general peritonitis had been observed. Abdominal section had been performed. The appendix had been found to be perforated. The patient had died a few hours afterward.

In a second group of cases the inflamed appendix was completely surrounded by the products of inflammation, so that further changes in the tissue were prevented from contaminating the general peritonæum, at least for a time. In such cases the use of an exploring needle had been recommended, but the speaker had had little experience of its use. A distended gut could not be pierced with impunity. With regard to medical treatment, the amount of opium used should be the smallest quantity that would insure a fair degree of comfort to the patient, lest the symp-

toms be masked and the true condition of affairs not be rendered evident to the friends of the patient. Purgatives should be avoided. A mild enema was all that could safely be used. Under such treatment recovery might ensue. It was probable that merely a catarrhal appendicitis had been present. But apparent recovery was no certain indication that the appendix was whole, and in proof of this a case was cited where, after complete recovery, a second peritonitis had occurred. Here the abdomen had been opened and a quantity of pus removed, the patient making a complete recovery. In a third case the appendix was removed successfully during the period of quiescence. The paper was brought to a close by an earnest appeal for early operation.—*N. Y. Medical Journal*.

ACUTE ANTERIOR POLIOMYELITIS.—Opportunities for the examination of the spinal cord in recent cases of poliomyelitis are comparatively so infrequent that every advantage should be taken of them when they do arise. DR. R. T. WILLIAMSON, of the Manchester Royal Infirmary, has published (*Medical Chronicle* for September) a detailed account of such a case, where death occurred suddenly five weeks from the commencement of symptoms. The patient was a young man, twenty-two years old, who first complained of numbness in the right hand, the feeling soon extending to the right leg and the left side, and on the third day being followed by complete paralysis of arms and legs. The knee jerks were absent. There was no anæsthesia, and the sphincters were not involved. Rapid muscular atrophy then ensued; but he was commencing to regain some power when death occurred. The lesions found by Dr. Williamson in the spinal cord may be thus summarised: In the lumbar region, a patch of cell infiltration in the outer half of each anterior horn, composed of small round leucocyte bodies and large oval or round nucleated cells. At the periphery of the patch the blood-vessels were greatly distended, and their perivascular sheaths full of round cells. There were no true hæmorrhages. No nerve-cells were visible in the area which corresponded to the region of the antero-lateral, postero-lateral, and central group of ganglion cells. Such cells still existed in the inner part of the cornu, but those bordering on the patch were shrunken and deformed. The network of nerve fibres was destroyed by the infiltration, but in the white matter no degenerate fibres were seen. The contrast between the anterior and posterior nerve root was striking. In the former the fibres were scanty, separated by cells and their myelin broken up into fragments, whilst the latter exhibited very slight changes indeed. The dorsal region of the cord showed only slight cell infiltration and vascular distension in the outer part of the anterior horns, where a few

nerve cells were shrunken. In the cervical region the changes were much as in the lumbar, but less pronounced. The infiltration, however, here extended rather further in a posterior direction; and, moreover, the lesions were slightly more marked in the left than in the right half. In the filum terminale the vessels were dilated in the anterior horns, and a few nerve cells in the outer part had their processes somewhat obscured. In all parts the changes were most marked at the point of entrance of the antero-lateral artery. Microorganisms were sought for, but not found. Some degenerate fibres were found in the trunks of the ulnar and sciatic nerves.—*Lancet*.

EXTRAUTERINE PREGNANCY TWICE IN THE SAME PATIENT.—DR. LEOPOLD MEYER, of Copenhagen (*Annals of Gynecology and Pediatrics*, July, 1890), describes a suspected case, under his care. The first operation was performed at about the twentieth week, four weeks after rupture; there was tubo-abdominal pregnancy of the left side, and the left tube and ovary were removed. The patient was discharged cured in January, 1888. She menstruated regularly, but hypogastric pains set in towards the end of summer. On September 6, 1888, the pains came on after hard work; and on the next day, ten days before the period was due, she lost some very dark-coloured blood. The hæmorrhage stopped. On September 19, Dr. Meyer examined the case. On the abdominal end of the right tube, but inseparable from the ovary, a tender swelling of the size of a big walnut could be felt. Symptoms of collapse set in a few days later, with no distinct evidence of internal hæmorrhage. On October 25, severe symptoms set in after metrorrhagia; there was no doubt that bleeding was going on internally. The patient rallied, metrorrhagia continued, and on the night of October 28, she passed a membrane, which had all the characteristics of a true decidua of pregnancy. The hæmorrhage stopped on November 11. On February 19, 1889, only a small remnant of a big soft swelling, which was felt to the right and behind the uterus during the attack in October, could be detected. The patient was in good health when her case was published. The evidence that her second illness was of the same character as the first was strong. Dr. Meyer gives abstracts of nine similar cases (Lawson Tait, Kletzsch, Herman, Van Henkelom, Veit, Olshausen, and Bloch; three of the nine occurred in Veit's practice). Of these, only three were verified by abdominal section (one Olshausen, one Veit), or by post-mortem examination (Tait). The remaining six are open to doubt, as in Dr. Meyer's case.—*Brit. Med. Journal*.

RETENTION OF URINE FROM PROSTATIC OBSTRUCTION IN ELDERLY MEN.—DR. J. W. S. GOULEY says that a common cause of imped-

ment to urination in elderly men was enlargement of the prostate, but it was only when the prostate was unequally enlarged that it so acted. The following forms of unequal enlargement obstructing the urethro-vesical orifice need in this paper be named: 1, general enlargement with excessive development of the posterior third of the lower isthmus; 2, enlargement of the posterior third of the lower isthmus without apparent increase in the rest of the prostate; 3, enlargement of one lobe which encroached upon the opposite lobe, obstructing the prostatic urethra; 4, unequal enlargement of both lobes, rendering the prostatic urethra tortuous; 5, multiple intra-urethral tumors; 6, intravesical enlargement of one lobe. The alterations of structure differed somewhat in their component elements. After discussing the symptoms, the means of diagnosis of the several forms of enlargement, especially of four, were pointed out.

Acute retention occurred among elderly men with incontinence as well as among those who had no hindrance. To temporize or rely wholly upon medicaments in its management was to place the life of the patient in great jeopardy. Select the catheter best suited to the case and introduce it. If called during the first twenty-four hours the bladder may be emptied at one sitting of three-quarters of an hour; but if on the second day, draw off only a third, and a little more than is secreted every two or three hours, emptying the viscus in a day or two. Special emphasis was placed on not drawing off too much at one sitting in older cases. The after-treatment should accord with the individual case, but never allow the bladder to again become over-distended. Irrigate the bladder once daily with warm boracic acid solution, 3 grains to the ounce, with the addition of one-fourth of peroxide of hydrogen solution. Chronic retention was also considered, and suitable catheters described.—*Medical Record*.

HYPODERMIC INJECTIONS OF CAFFEINE IN POST-PARTUM HÆMORRHAGES.—DR. MISRACHI, in the *Arch. of Obs. and Gyn.*, highly recommends hypodermic injections of caffeine in post-partum hæmorrhage, especially in such cases as require immediate aid, and after great loss of blood has taken place. It is especially useful in country practice, when perhaps, the physician has just come from a case of infectious disease, and there is not time for auto-disinfection preparatory to introducing the hand into the uterus. Caffeine acts more quickly than ergotine, and is more stimulating than ether. The formula of the fluid for hypodermic use is as follows: Benzoate of soda, 3 grams; caffeine, 2.0 to 2.5 grams; aqua destillata, 6.0 grams or *quantum sufficit* for 10 cctm. Every cctm. contains 0.25 grams of caffeine. The solution is administered warm, from

six to ten injections in the course of the day. Misrachi has witnessed such brilliant results from it that he now carries this solution regularly in his obstetrical case. Tablets of benzoate of soda and caffeine, to be dissolved in boiling water when needed, will do instead of the standard solution.—*Archives Gynecology, Obstetrics and Pediatrics*.

THE SURGICAL TREATMENT OF EMPYEMA.—DR. A. E. MORRISON reports in the *Edinburg Medical Journal*, twenty cases, the ages ranging from 8 months to forty-three years. Of these all but one, a starved infant of eight months, recovered. In five cases prior to operation pus had been expectorated. In one a cure was effected by this means alone, without operation. In one alone, after a slow and tedious convalescence, the pus was absorbed without operation. Two cases were complicated by phthisis, one of which died after cessation of discharge from the pleural cavity. In two instances excision of a portion of a rib was required.

In performing the operation the strictest antiseptic precautions were observed. The skin incision was vertical, the incision through the muscles horizontal, along the upper border of the seventh rib. Injection of the cavity was in no case employed.

The following conclusions are drawn :

1. In the diagnosis of empyema the only certain sign is obtained by the exploring needle, and this, carefully used, is perfectly safe.
2. Antiseptic incision—the wound being sufficiently large to admit a full-sized drainage-tube in the posterior axillary line, and made with the patient on his back—drainage, and careful dressing are all that are required.
3. The time for healing in uncomplicated cases should not exceed four weeks.
4. Double openings, irrigation of the pleura, and excision of the ribs are unnecessary and harmful if the case be seen before an opening has formed through the skin.—*Archives of Pediatrics*.

WHAT IS THE BEST METHOD FOR PREVENTING INFECTION OF OPERATIVE WOUNDS?—In a paper read before the Illinois State Medical Society, DR. L. M. McARTHUR stated that one half of the primary wounds, under the present methods, are dressed aseptically at the time of operation, and then only become infected at the redressing. Operators under excitement are inclined to drop into careless habits, and proceed somewhat after the following fashion: They call for a questionable basin, and dropping into it an indefinite amount of carbolic acid, proceed to remove the dressings without any such formalities as we were satisfied were essential at first. Here is where the fallacy lies to-day. Too great carelessness at the redressing permits infection and

encourages the skeptical in the belief that there is nothing in the principles of aseptic surgery. Before the old dressing is removed a stream of 1 to 1,000 should be ready and playing on the inner layer of gauze as it is being removed, and during the time of exposure of the wound. Having rendered the parts clean, they can best be kept so by providing, in addition to the regular dressing, a heavy dressing of absorbent cotton, not with the idea of catching discharge, but with the object of filtering the atmosphere which is to gain access to the wound through the dressings.—*Medical Record*.

LEPROSY AND VACCINATION.—The September number of the *Occidental Medical Times* includes a joint article by DR. SWIFT, of Molokai, and PROFESSOR MONTGOMERY, of San Francisco, entitled "An Interesting Case of Anæsthetic Leprosy apparently following Vaccination." The details are thus given: "Peke, male Kanaka, aged 25, parents healthy. Has had two brothers and three sisters; one sister died at the Leper Settlement, a leper of the tubercular type. Peke has been a leper of the anæsthetic type for ten years, seven of which have been spent at the Leper Settlement. In 1878 he was vaccinated, and about one year after symptoms of leprosy appeared, and there is now a large anæsthetic scar at the site of this vaccination. He has during his whole life associated with lepers. Sixteen months ago he was a fine strapping-looking fellow, and was employed as policeman and gravedigger at the hospital at Kalawao." The authors further remark that "one of the most interesting points in this case is that Peke had been vaccinated one year before developing symptoms of leprosy, and that the vaccination scar became anæsthetic; might it not be that with the vaccine virus the virus of leprosy had also been inoculated?" This is a fair example of the bulk of the evidence as yet brought forward connecting leprosy with vaccination. Here is a patient living all his life in a leprosy country, and subject to all the conditions—diet, contagion, and what not—which may have causal relation with the disease; but because he happens to have developed leprosy a year after he was vaccinated, and now (eleven years subsequently) shows an anæsthetic patch at the scar, he is adduced, *post hoc ergo propter hoc*, as an instance of the probable inoculation of leprosy by vaccination. Remembering Arning's important observation of leprosy bacilli in vaccine lymph taken from a leper, it is not to be denied that such inoculation may be occasionally possible; but, in spite of the mere expressions of opinion of medical men and others in Honolulu and elsewhere, it may be said that we have at present no clear and indisputable facts proving that leprosy has been spread by means of vaccination.—*Brit. Med. Jour.*

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REMARKS ON INSANITY.

There can be no greater misfortune than insanity,—disease of the highest expression of life,—that complex manifestation which for want of a more descriptive name is referred to as *mind*. It seems indeed a fortunate thing for our race that disease of the organic basis of mind is far less frequent than disease of other less important organs. It would seem as if a Divine wisdom had thrown a protective arm around the flower of all human existence, to ward off the arrows of disease and of decay, for certainly in the immense majority of cases it is preserved intact through many years of the gravest forms of bodily illness. Nevertheless this is one of the human realities and is a constant problem in the minds of all having a regard for the highest development of the race.

Perhaps no other thing furnishes more material for serious consideration respecting insanity, and its terrible ravages among all classes of people, than a visit to the wards of any large asylum, and a glance at the miserable wrecks of chronic cases with which the acute storm of insanity has filled our State institutions. This survey of whole wards of terminal demented will not only prove to all a pitiable sight, but will also impress one, as nothing else can, of the importance of early and careful treatment of acute cases, and one involuntarily thinks "can nothing be done further in the present state of our knowledge to lessen this overwhelming percentage of the chronic insane?" This question we think is one that is more strongly present than ever before in the

minds of the generous, the philanthropic, and the humane scientists of to-day. It has been the main-spring of all the so-called reforms which have been and are constantly being tried in all civilized countries to alleviate the condition of this unfortunate class. That the progress has been great all will admit, and for proof one has only to glance backward a few years, but the most sanguine will equally acknowledge that we are as yet only upon the threshold of discovery in this branch of medical science. How little is known of the real cause of the various psychoses! How far we are from any definite pathological classification of insanity! Perhaps the many difficulties in the way of brain investigation is sufficient excuse for the fact that this branch of pathology has hitherto been far behind the pathology of other less important diseases. At last, however, some definite progress has been made in this direction and with the many workers in our asylum laboratories the world over, we may justly hope for more light upon the psychical diseases. On the other hand the physiology of the mind is by no means clear, and in this connection we notice an interesting article by DR. EDWARD COWLES, superintendent of the McLean Asylum, Massachusetts, in a late number of the *American Journal of Insanity*.

Dr. Cowles' article is entitled the "Mechanism of Insanity," and the first of it is devoted entirely to a consideration of the normal elements of mind. It is a plea for a close consideration of the normal mind and is well worth reading. If this sort of knowledge was more universal it might lead to earlier diagnosis and treatment of mental diseases. Since a very insignificant proportion of the chronic cases of insanity recover,—and to verify this statement any asylum report is sufficient,—the treatment of acute cases becomes a most important subject, and demands that our fullest knowledge should be employed towards this end. Certainly the truest State economy is the most liberal expense for the investigation of the symptom-groups which are termed insanity. This feeling has inspired the liberal legislation of the last few years in many of our States, in providing State care for the insane. The wisdom and humanity of this law are apparent to all who will read of the horrors of some of the "county houses" in the States in which these reforms have been inaugurated, and the subject thoroughly venti-

lated. We sincerely hope that soon the county alms-house insane asylum will have become a thing of the past, and that all the indigent insane will receive all those advantages which a State asylum possesses over the miserably kept county houses. A brief article, relating to the history of the treatment of insanity has been written by ORPHEUS EVERTS, M.D. (*American Journal of Insanity*, January 18, 1890), and concisely gives an idea of the progress which has been made. His paper is a very brief, incomplete notice of the subject, but for the general reader will convey an idea.

Notable among reformatory measures are the "cottage asylum" and the "family system," the latter of which has been in successful operation in Massachusetts; but time only will conclusively prove whether these measures will fill the wants of the growing problem of the indigent insane. Then we note special wards for acute cases, extra appliances for their treatment, and ample medical attention; all of which attest the growing popular sentiment that seeks the restoration, so far as possible, of this afflicted portion of humanity. As research and advancing science indicate the way, the men whose lives are spent with the insane have not been slow to follow.

A field which promises most for our future knowledge of insanity is that of pathology, and here the workers are multiplying, laboratories being now established in the largest asylums of this country for the special investigation of the changes of the nervous dements. An immense amount of material, which formerly passed unnoticed, is now being carefully examined and the results recorded. Surely it is reasonable to hope from this direction new light upon the treatment of the acute psychoses, and upon the almost total darkness of our understanding of even the simplest forms of mental derangement.

That the practical doctor and the alienist are gradually coming into closer relationship, as the physical basis for psychopathic disorders is being more firmly realized, cannot be doubted. We should at least congratulate ourselves that we live in an age when the insane are no longer treated as human outcasts, when the mass of the people are beginning to realize its true nature, as allied to other diseases, and that it is as much a definite disease as is typhoid fever or pneumonia. We should be thankful for the progress already made,

and for the more brilliant hopes for the future; since science is lending all her aid, and a more living human sympathy is yearly being evinced, towards the better understanding of the prophylaxis, nature, and rational treatment of insanity.

Lately there has been a discussion in the journals as to the advisability of the admission of the acute cases of insanity into general hospitals, which are suitably provided with separate apartments for their care. Anyone who has had a practical experience with such cases in a general hospital will not think this a generally advisable procedure, unless *very complete separation and isolation* for such cases can be afforded—an impossible thing in many of our city hospitals. We believe that in time separate and distinct hospitals for the treatment of the acutely insane will be provided, such as has already been done in London, and that such an arrangement is the ideal manner of caring for them. This ideal hospital of the future will have its list of attending and consulting specialists, and any advantages and appliances which science can suggest will be used to prevent the present high rate of chronic cases.

That such a plan for the indigent insane is Utopian we freely admit, but still the progress made in the past twenty-five years justifies our highest hopes for the future.

TREATMENT OF DIPHTHERIA.

That this disease is to be classified among the acute infectious disorders, dependent upon a specific infectious microorganism, is now generally believed. Whether the disease is at first a local trouble, with secondary infection of the organism, or whether it is a constitutional affection from the beginning, with local manifestations, are questions upon which the profession is still divided. Certain it is that abundant clinical experience has taught the value of antiseptic applications to the affected part. This rule has been evolved in the face of constant reiteration of the constitutional nature of the affection and the consequent valuelessness of such local treatment. We may remark in this connection that recent experimental work upon the Klebs-Löffler bacillus has shown that it is capable of producing an exceedingly poisonous albuminoid, when grown in nutrient media. This experimental fact lends additional weight to the

clinical value of local antiseptic measures in this disease.

DR. HERMAN WOLF (*Therapeutische Monatshefte*, September, 1890) has borne strong testimony regarding the antiseptic value of menthol in these cases. He proceeds according to the following method: A powder is prepared containing one part to ten or twenty of sugar, this, by means of a camel's hair pencil, is carefully applied to the false membrane and inflamed mucosa, which should have been previously cleansed from all secretions; if the nose is involved small quantities are blown into the anterior nares and post-pharyngeal space. If the process has extended to the bronchi, it may be employed in the form of a fine spray by inhalation. He claims for menthol that it is quite free from toxic properties, is pleasant in odor and taste, and has a greater antiseptic value than most of the usual gargles and sprays. Of the value of complete and early local antisepsis he has no doubt.

EDITORIAL NOTES.

DECLINE OF THE FRENCH.—The French political economists in discussing the vital statistics of their country as recently published express much apprehension. It is stated that never since 1870, has the marriage rate been so low as it was in 1889, in which year there was a decrease of 3,900 in the number of marriages compared with those that were contracted in 1888. With respect to births, the decrease last year, compared with the preceding one is put down at 2,000.

Despite the fact that the country is richer in resources than most of its neighbors, the fact remains that the number of marriages goes on decreasing, and in addition, there is a distinct purpose on the part of married couples to limit the number of children. This is more perceptible amongst the class that is called well-off than amongst those in a humbler position; but the children born to poor parents are too often sent a few days after their birth to some distant part of the country, where they soon drop out of life. There are also statistics belonging to illegitimate births based upon the ratios of the different peoples of Europe, but though the analysis may be of interest, they seem in the main to be explained on the score of obstacles to matrimony, as inadequate means or possibly parental opposition.

As it is, the individual exalts himself above all community interests or moral considerations in thwarting nature by preventive means, or a resort to abortion outright. Such crimes being secret are of course well guarded, but as every physician suspects their practice is widely spread. The penalty falls upon the race in its being displaced by a more prolific one and finally the catastrophe of utter extinction ends the history of its achievements. When the abortionists began to swarm into Rome, they also beckoned on the barbarians who made the imperial city a contemptible object of commiseration. Perhaps our late census may reveal truths equally unpleasant and the American, whose parents have so ingeniously conspired to keep out of the world may even cease to be a factor in the raging battle of races. There is much need of fellowship between the moralist and the physician. The Sybarite who drifts into all kinds of perversions, being an enemy of society, deserves at the very least, exile if not execution. Let us anyhow face the truth that there are many other sinners besides the French.

THE LATE CANON LIDDON AND THE MEDICAL FRATERNITY.—In the death of the Canon of St. Paul's, London, the medical profession has lost a sincere friend. He was the son of a physician, and near relations of his follow the same calling in the city of Taunton. He ever manifested, in his public addresses, a most sympathetic bearing and even laudatory expression towards our profession. Canon Liddon seldom let slip an occasion, in the pulpit of St. Paul's Cathedral, when he could fitly say a kindly word concerning the duties, worth and work of medical men. His was a nature, finely strung to catch the chords that vibrate under the influence of physical suffering; and he would be disposed naturally to accord his grateful sympathy to those who moved among the scenes of suffering intent on their allaying, and sparing not themselves where their labors could do good. In his early days, no doubt, he had many opportunities to get an inner view of the daily round of the responsibilities and labors of his medical relatives, and a deep and abiding impression was left which made him ever after a sympathizing ally of the healing art.

THE FRUITFUL BERLIN CONGRESS.—As one successful Congress leads inevitably to others, we have the right to expect that those that follow

the great Berlin gathering will be pregnant with immense benefits to medicine. Furthermore, Hy-men is said to have done an unusually large business at Berlin; according to one of the papers of that city, one of the results of the meeting was the publication of four hundred engagements of marriage. Any nation that desires to boom matrimony should have an International Medical Congress without delay.

DR. EDSON of New York has said: "From a sanitary standpoint the milk supply of cities is second only in importance to the water supply. The most vulnerable portion of the community to the attacks of disease are children."

It is said the Marine-Hospital Department contemplates having medical men attached to all United States Consulates, who will examine all persons desiring to emigrate to America, and ascertain their physical fitness.

ALCOHOL AND CHILDHOOD.—A Report of the Conference on "Alcohol and Childhood" held recently under the auspices of the Church of England Temperance Society (the Duke of Westminster in the chair) which excited so much attention by reason of the number of influential medical men attending it who had not hitherto identified themselves with the Temperance movement, is about to be published by the Society in a separate form.

NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION.—The seventeenth annual meeting of this Association will be held in the City Hall, Streator, on Tuesday, December 2, 1890, at 10:30 A.M. Special Reports: "Tenth International Medical Congress," by E. P. Cook, Mendota; "The Code of Ethics," by J. W. Pettit, Sheridan; "A Case of Hydrophobia, or Lysophobia," by W. A. Mansfield, Metamora; "The Use of the Obstetrical Forceps," by T. H. Steele, Paw Paw; "Management of the Newborn Infant, and the Child under the Age of two Years," by F. C. Vandevort, Bloomington.

This Association having nearly doubled its membership within the last five years, embraces a steadily widening territory and influence, and presents a most healthy growth. It seeks to promote the social and professional relations of its members; to afford an opportunity for the mutual comparison of experience and results among those

practicing within the same locality; and to stimulate and encourage the earnest medical student and practitioner in his individual effort within the field of professional progress. Its proceedings are of general interest to the profession; its discussions practical and free, and the relations of its members fraternal and unreserved. Physicians eligible to membership are cordially invited to unite therewith and contribute papers, clinical reports or professional experience, and engage in the discussion of the topics presented at its meetings. Copies of by-laws and membership blanks forwarded on application to the Secretary, Wm. O. Ensign, Rutland.

A GLASS AND METAL OPERATING TABLE.—The *N. Y. Tribune* says: French ingenuity has devised a surgical operating table, which, as a decidedly original conception in that line, has elicited much interest. The table, which measures seventy-eight inches in length by twenty-six inches in width, stands thirty-six inches from the floor, and consists exclusively of glass and nickel-plated iron. It is composed of four triangular plates of glass inclining to a common centre by a declivity of an inch and a quarter, converging at their apexes to a central opening one inch in diameter, in which is fixed a metal ring, through which fluids may pass into a rubber tube to the floor, and it is supported by four legs, connected for the sake of stability by cross-bars; it moves freely upon large castors, and though weighing 280 pounds, can be moved with ease by a single person; there are no arrangements for varying its elevation, any desired change in the attitude of the patient being accomplished at will with the use of rubber cushions. At the head of the table, where stands the assistant, swings a basin large enough to contain everything needed for anæsthesia, with ether, chloroform, also forceps, etc.; closed, it disappears under the table, but a very slight traction places directly under the anæsthetist all the articles needed. The table is also measured off into centimetres in its entire length, so that measurements may be rapidly taken.

SILENT HARMONIES.—A new medical club in Boston has been organized for the mutual cultivation of its members in music, and is known as the Physicians' Musical Culture Society. It is said that each member is in duty bound to compose some fresh air for the sick-room.

TOPICS OF THE WEEK.

THE RELATIONS BETWEEN PHYSIOLOGY AND MEDICINE.

Dr. James Andrews, in the course of the Harveian Oration delivered at the Royal College of Physicians, London, refers to this subject in words as follows:

A very common reproach cast upon our profession is that we pretend to be, and are not, scientific; that, to quote an old sarcasm, our occupation consists in putting drugs of which we know nothing into bodies of which we know less. There is just sufficient truth in such criticisms to make them somewhat unpleasant to those for whose good they are no doubt intended, but they derive the keenness of their sting from our own shortcomings and mistakes. We claim too much and do too little for medicine. We forget that our duty as medical men is twofold—to practice an art and to study and advance a science; that we are bound to make the best use we can of the knowledge within our reach, and, if possible, to add to it in the using, but this last is not our chief duty. We dare not sacrifice the interests, the life of one single patient to the advancement of science. If our conscience were to cease to forbid us to do this, then the sooner modern science deprives us once for all of such a treacherous guide the better for the world will it be. A man may be a first-rate practitioner and yet have no title whatever to be ranked among scientific physiologists, as a sailor may be a first-rate navigator without being in any proper sense of the word a scientific astronomer or mathematician or physicist. Yet, in spite of this admission, the physiologist ought to be the last to taunt us with ignorance and empiricism, for his own science would be far more imperfect than it now is were it stripped of all that it owes to the results of medical and surgical practice. One of the best, if not the best, definitions of "medicine" is that which describes it as "applied physiology." If we fail to attain to that ideal, if we are compelled daily to act upon probabilities in place of scientific certainties, then the blame must rest at least as much on the physiologist as on ourselves. He fails to supply us with the knowledge which we require and which he alone can give us. Medicine is thus but one of many instances of an art stunted by the insufficient development of the science with which it is connected and on which it rests. I do not mean insufficient in a general sense, but insufficient for certain special purposes. Permit me to anticipate a very possible criticism upon what I have just said. It may be thought that my words are an unfair attack upon physiology, and that, safe from immediate contradiction, I have sought to defend medicine by abusing the very science to which, of all sciences, we are most deeply indebted. Now, if I have, indeed, done this thing, I have been guilty of the basest ingratitude; I have ignored the splendid services which physiology has rendered to medicine, services which we believe to be but the earnest of others yet more splendid in the near future. If physiology is, as it seems to me, not yet equal to all the requirements of medicine, that is certainly not due to the indolence or weakness of those who cultivate it, but to the inherent difficulties of their task. They

have done all, and more than all, which we could have looked for. But at the sight of sickness which we cannot heal we grow impatient, unreasonable, and long for knowledge not yet within the reach of man. We even refuse to recognize the wisdom of those who decline to attempt to solve by scientific means problems not yet ripe for such solution. However, although the object matter with which we deal lends itself unwillingly to strict scientific method, although from its very nature we are unable to submit it to direct experiment, except in most imperfect fashion, it may still be studied and observed in a scientific spirit. Every case of disease may be, ought to be, looked upon as an experiment in practical physiology, an experiment carried out with transcendent skill by nature herself, but which she leaves it to us to observe, to register and to interpret.

Now, in this matter of scientific observation it cannot be denied that we fall very far short of what we might accomplish. It will do our profession no good to dwell upon the legitimate excuses which may in part explain our failure; rather let us acknowledge that failure and use our utmost efforts to remove it. Nor are leaders wanting who can teach us how this may best be done. We need not look beyond the circuit of our college to find men who can and do carry on their daily work in this scientific spirit, approving themselves herein worthy followers of the example of Harvey. Surely we cannot regard Harvey the physician as less scientific than Harvey the anatomist and physiologist, when we find him showing from certain familiar reasonings that the circulation is matter both of convenience and necessity. In his hands the physical signs of an aneurysm, the effect of extreme cold, the phenomena which attend "contagious, poisoned wounds, the bites of serpents and rabid animals, lues venerea, and the like"—all these are made to supply probable and cogent arguments for the truth of the doctrine of the circulation of the blood. Were our clinical knowledge as carefully accurate in its statement of facts, were it always used as soberly and to as good purpose as Harvey's was, then there would be, there could be, no outcry raised against us on the score of credulity or of want of scientific method. When he had arrived at a knowledge of the circulation of the blood by means of anatomical researches and vivisections, Harvey at once applied this knowledge to the explanation of clinical phenomena, up to that time inexplicable. He then used the fact that this explanation was a simple and adequate one as a new and strong argument for the truth of his discovery. That this intimate connection, this solidarity, between physiology and medicine is no longer recognized so fully as it once was is much to be regretted, for it is injurious to both lines of study, and has arisen, at least in part, from faults on both sides. But this view must not be pushed too far. We must not lose sight of the fact that the relationship between physiology and medicine has in many ways greatly changed during the last 250 years, and that such change is a necessary consequence of the progress made by physiology. In Harvey's time, in any classification of the sciences, physiology might have been regarded as a department of medicine. I need scarcely say that now

the reverse would be the case. The two deal, it is true, with the same object matter, for there is no physiological fact or law which is without some bearing upon medicine; and, again, every medical fact or generalization, even those most purely empirical, is more or less important to physiology. But their aims and methods are so different that they tend inevitably to become more and more sharply differentiated from each other. The goal of physiology is truth—*i. e.*, perfectly trustworthy knowledge of a certain class of facts and laws; and this independently of any use, good or bad, to which that knowledge may be put. The goal of medicine is power—*i. e.*, ability to manipulate certain natural forces in such fashion as to produce certain effects. No doubt theoretically the two ends coincide, and we may hope that in some remote future they will do so in reality and perfectly. For the present we must be content with having in one direction much knowledge which confers little or no power, and on another side very imperfect knowledge which yet brings with it very great power, too often ill-directed. Again their methods are different. Physiology by slow degrees has come to rely more and more on purely scientific modes and instruments of research, and to apply them by preference to matters which can be brought to the test of direct experiment. Medicine, on the other hand, has no choice but to remain, so far as it has a scientific side, a science of observation; for anything like effective investigation of the matters with which it deals by direct experiment is impossible. As physiology slowly reduces to order the apparently hopeless confusion of so-called vital actions the easiest questions are attacked and answered first, and thus those which have to be faced later in their turn are more and more difficult, more and more refractory, to scientific analysis. Now, these more difficult questions are often of vital importance to medicine, and in them lie dormant vast possibilities of increased knowledge of the nature of disease, of increased power over it. And yet from the great difficulty of subjecting them to experiment physiology may seem for a time to fail us, and the task of employing physiological results to explain clinical facts, or to form the basis of rational treatment, becomes harder than ever.—*The Lancet*.

PROFESSOR ROBERTS BARTHLOW.

With reference to this distinguished physician and teacher we quote the following from *The Times and Register* of November 1:

"Up to the time of writing the situation at Jefferson remains unsettled. Prof. Bartholow declined to take a vacation, and the Trustees have declared his chair vacant, and will elect his successor on Monday. While Dr. Hare is most frequently spoken of as the chosen successor, many urge Drs. S. Solis-Cohen, T. J. Mays, Frank Woodbury; and Dr. Potter, of San Francisco, is also mentioned prominently. The action of the students, though prompted by the generous feeling of affection to their old instructor, was ill-advised in the extreme. Nobody has the interests of Jefferson at heart more than the Faculty and Trustees, and they may certainly be credited with having very good reasons for displacing as strong a man as Dr.

Bartholow. It is not always best for the interests of either party that these reasons should be made public; and serious injury might have resulted had the students persisted in their action. As a graduate and well-wisher of Jefferson we trust that the result will be favorable to her best interests. Of the gentlemen named, Dr. Cohen would be, perhaps, best fitted to deal with an unruly class. He has won an honorable place among Philadelphia physicians, and displayed talent as a teacher. Dr. Woodbury would bring to the chair a ripe professional scholarship, with considerable practical experience as a teacher. As a clinician he has no superior. Dr. Potter has made a very favorable impression with his book on therapeutics, which has been adopted as a text-book in many colleges."

The Lancet-Clinic, of the same date, has an exceedingly interesting editorial upon "Overstrain and Overwork," evidently prompted by the sad lesson. Sketching with a masterly hand the salient points in the life of Dr. Bartholow, the editor closes his article with these words:

"A pall of mournful sadness comes over us as we contemplate the thought of this termination of such a career as that of the indomitable, the gifted Dr. Roberts Bartholow. A lesson, a parting lesson, is hereby taught, and should be thoroughly heeded by those who feel the iron grip of an insatiable ambition that is inordinate in its character, that leads and goads the discontented to a violation of physiological laws in order to be able to accomplish some specific purpose that may be ever so laudable in motive. To some we say: *Slow up*; lest a link be weakened and the golden bowl broken."

THE INTERNATIONAL MEDICAL CONGRESS AT BERLIN.

The first volume of the *Transactions* of the International Medical Congress at Berlin is already in the press, and will be published in November. In addition to the business part of the proceedings, lists of delegates, members, etc., it will contain the report of the general meetings of the Congress. The work of editing the *Transactions* is in the hands of a committee composed of Professors Virchow, von Bergmann, and Waldeyer. The expenses incurred by the city of Berlin in connection with the recent International Medical Congress amounts to some 80,000 marks, so that, of the sum of 100,000 marks voted by the municipality, a balance of 20,000 marks (£1,000) remains in hand. The expenses included the cost of the *Festschrift* presented to members of the Congress, the banquet in the Rathhaus, the exhibition, the sanitary and other inspections, and the electric illumination.—*Brit. Med. Journal*.

PROPAGATION OF DISEASE.

M. G. Alessi has confirmed and extended the results of Grassi on the part taken by flies in the propagation of disease. Having fed flies on the matter expectorated by tubercular patients, he has detected the bacillus of tuberculosis in plenty in the intestines and in the excretions of the insects. The bacilli are alive and active, and if introduced into the tissues of animals, they multiply and produce characteristic lesions. The microbia of cholera, of typhoid fever, splenic fever, etc., are likewise swallowed by flies, and after passing through their bodies, retain all their vitality and virulence.—*Research*.

PRACTICAL NOTES.

PRESCRIPTION FOR ALOPECIA.

Dr. Morvan, in the *Union Médicale*, recommends the following salve in alopecia:

Gallic acid, grains, 45.
Essence of lavender, minims, 15.
Castor oil, drachms, 6.
Vaseline, drachms, 12.

M. This ointment should be well rubbed into the parts affected, every night.

OINTMENT FOR PIGMENT SPOTS OF PREGNANCY.

The following prescription for the treatment of cloasma of pregnancy is quoted by the *Revue de Therapeutique*.

R—Zinc oxide, 1 drachm.
White precipitate, 1½ grains.
Castor oil, 2 drachms.
Essence of rose, 10 drops.
Cocoa butter, 2 drachms. π

Apply morning and evening.—*Med. News*.

FOOD FOR INFANTS.

Dr. Louis Starr recommends the following as the best substitute for the mother's milk in gradual weaning of a child, say at ten months; it may also be employed to supplant the breast when the mother's milk is insufficient:

Cream, f3ss;
Milk, f3iiss;
Sugar of milk, 3ss;
Water, f3j.

Should this quantity fail to satisfy the child, all the ingredients except the cream may be increased until the mixture measures six, eight or twelve ounces.

TELLURATE OF POTASSIUM IN NIGHT-SWEATS.

According to *La Médecine Moderne*, October 21, 1890, tellurate of potassium has been found by Neusser to be valuable in the suppression and diminution of night-sweats. He employs one-third of a grain, in pill form.—*Medical News*.

CHRONIC OVARITIS.

Aside from the reflex physical derangements, both local and general, attending chronic ovaritis, there is usually present a greater degree of emotional disturbance than is found in disease of any of the female genital organs. This is not strange, since it is admitted that the ovaries give to woman, in a great measure, all of her characteristics of mind. When the inflammatory conditions are unfavorable for recovery, the emotional derangement is often progressive. In the early treatment counter-irritants and alteratives often give good results, especially the administration of small doses of the bichloride of mercury three times a

day. But, should the tissues of the organ become destroyed and suppuration take place, removal will alone give relief.—Godfrey, *Times and Register*.

LOCAL ANÆSTHESIA FOR SLIGHT OPERATIONS.

For operations upon small abscesses, opening fistulous tracts, or removing superficial growths, it is recommended that local anæsthesia be secured by atomization of the following solution:

R—Chloroform, 10 parts.
Sulphuric ether, 15 parts.
Menthol, 1 part. π

The anæsthesia which is thus obtained lasts from two to ten minutes.—*Medical News*.

FOR ACUTE PLEURISY.

R. Ext. jaborandi fl., 3j.
Sig. Take at once, in a cup of hot water.

R. Sodii citrat., 3ij.
Sodii acetat., 3ij.
Sodii salicylat., 3ij.
Aque menthæ pip., q. s., ad f3vj.
 π .—Sig. 3ss every two to four hours.

Hot flannels to chest, sprinkled with laudanum, and a towel pinned tightly around body; dry diet; rest in bed; flannel underclothing and night-dress.—Waugh.

SOLUBILITY OF NEW MEDICINES.

The following table of solubilities of some new medicines may be useful to some of our readers:

One part of	Water.	Is soluble in	
Antifebrine	200	Alcohol.	Ether.
Antipyrin	1	10	10
Antithermin. . . .	{ slightly soluble.	slightly soluble.	slightly soluble.
Cocaine hydrochlor.	5	10	
Iodol	5000	3	1
Paraldehyd	10		
Pyrodine	1	1	
Quinoline tartrate,	80	150	
Resorcin	1	1	
Salol		5	5
Thallin (sulphate) .	7	100	
Thallin tartrate . .	10		
Urethane	1	0.6	

—*Pharm. Record*.

FORMULA FOR A GUAIAIC GARGLE.

To not a few of our practitioners, who have passed their meridian, guaiacum is esteemed only a little less than a specific for "sore throat," tonsillitis especially. The following is a combination for a gargle that has been very useful:

Ammoniated tincture of guaiac, 4 drachms.
Compound tincture of cinchona, 4 drachms.
Chlorate of potash, 2 drachms.
Strained honey, 4 drachms.
Powdered acacia, q. s.
Water, 2½ ounces.

To be used as a gargle, and a teaspoonful may be swallowed, every second hour.

SOCIETY PROCEEDINGS.

Chicago Medico-Legal Society.

Regular Meeting, October 4, 1890.

EDMUND J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. M. H. LACKERSTEEN read a paper on

THE SCIENTIFIC ASPECTS OF MEDICAL HYPNOTISM, OR TREATMENT BY SUGGESTION.

(See page 704.)

DR. ARCHIBALD CHURCH: Mr. President, as you have just stated, Dr. Hoag and myself were informally appointed by you as a sort of committee of control to coöperate with Dr. Lackersteen in such experiments as might be possible for us to make looking to the determination of the therapeutic value of hypnotism. In a conversation held on the 12th of March last we arranged that patients of a suitable sort secured by any of us should be first seen and carefully examined by Dr. Hoag or myself, and then subjected to treatment by suggestion, by Dr. Lackersteen, such treatment to be at times under our observation with every opportunity to examine and note the condition of affairs as the cases progressed. For a number of reasons we have been unable to carry out these details. To speak personally, patients coming to me in dispensary practice refused to be sent down town for hypnotic treatment; and patients in my private practice could not be sent for a number of reasons. So far as the committee have a report to make it is absolutely negative with this exception: two cases were referred to me by Dr. Lackersteen for diagnosis and examination previous to their being treated by him. One was a medical gentleman from Texas, a maniac with well pronounced delusions and hallucinations of hearing. He subsequently went to Dr. Lackersteen, but I believe the séance was a failure; shortly afterwards the man left town suddenly, pursued by his delusions of persecution. The second case was one of a young lady of well-marked hysterical make-up, presenting a large number of hysterical manifestations in her daily conduct, indications of the malady. I did not see her subsequently, but I am informed that after a number of séances she commenced teaching school and now has a responsible position, which she fills to the satisfaction of all concerned. At the time I saw her this would have been impossible.

It now remains for me to give the little personal experience I have had with hypnotism. Hypnosis is usually produced by fixing the eyes upon a bright object held at a short distance, and suggesting sleep. In my first ten experiments, as I was anxious to eliminate the personality of the hypnotizer, I did not suggest to these people that they were to be hypnotized, but had them

fix their eyes and attention upon a bright object held near the eyes and above the ordinary line of vision. They maintained an intense gaze for from five to thirty-five minutes, depending upon their good-nature. I did this with a little trepidation, because I was aware of the experiments of Drs. Dercur and Parker where, merely by having the finger tips extended and the eyes and mind fixed upon a given object for from ten to thirty minutes, serious convulsions resulted. If this could be done by the physiological strain of a set of voluntary muscles, it would apply to the convergence of the eyes; but I am glad to say that in the ten examples I have cited there were no bad results, and no results of any kind whatever.

In the next seven experiments, besides using a bright object, I told my patients that after a given time they would surely go to sleep; but no sleep was produced. The last case was that of a hysterical girl who had been bed-ridden for two years. I explained hypnotism to her as well as I could, I dilated upon what had been accomplished, interested her in it, and she was finally very anxious to be hypnotized, desiring hypnotism or any other means that would relieve her sufferings. After fixing her attention by my fingers the eyes finally closed and I thought I had her hypnotized, and I said, "You are asleep," but she giggled, and giggling and hypnotism are incompatible. So I impressed upon her that the giggling must be left out, and after a number of séances marked by great perseverance and patience on the part of both, in two instances only I was able to establish a slight degree of "drowsiness," as she expressed it. After the suggestion she would appear to be asleep, the eyes would be closed, there would be a little quivering of the lids, I could see the eyeball was turned up under the lid, and I suggested that the pain, which had been her terrible complaint for a number of years, causing lack of sleep, would upon awakening be absent, and that she would sleep well at night. But the pain neither disappeared nor did she sleep, and consequently if it was hypnotism that was produced, it was of no value in this instance. This fact should be borne in mind, that where a mesmerist goes into a small community, he first exhibits his skill upon a subject he has brought with him, and professes his ability to hypnotize any one. To see is to believe in hypnotism as in other things, so on the second night the mesmerist will get two or three subjects from the audience, and the following night maybe half a dozen. In my experiments—and I presume the same difficulty will be encountered by all—I had no subjects to act as object lessons for those I wished to experiment upon.

I should like to point out some of the alleged dangers of hypnotism, because unquestionably it is a wonderful force. The examples which have been tested and published, and verified by unquestioned

authorities, no longer leave any doubt of the existence of such a thing as hypnotism. But it is well to know that the fire can scorch before playing with it. Sir Andrew Clark, as quoted in the *Therapeutic Gazette*, states that in his opinion, "the habitual practice of what is called hypnotism, among women, is very injurious both morally and intellectually." And in the *Medical Record* of recent date, Dr. Norman Kerr, of London, among other things asserts "that only a limited number of persons are susceptible," and I may add that only a very limited number of persons are capable of being hypnotizers; which leads to the conclusion that hypnotism must be of very limited utility: "that the after-effect is a disturbance of the mental forces and dissipation of nerve energy; that frequent repetition is apt to cause deterioration of brain and nerve function, intellectual decadence and moral perversion. That hypnosis is a departure from health, a diseased state; that hypnosis is a true neurosis, embracing the lethargic, cataleptic and somnambulistic states; that the dangers of hypnotism are great. That each séance may bring the hypnotee further under the control of the hypnotizer, with complete submission of the former to the will of the latter." We must not forget that the most enthusiastic of European hypnotizers detail cases that wander around their hospital wards, leading a mere vegetative existence which has been induced by repeated hypnotic treatments; men and women who at the slamming of a door or the crash of a bit of glass instantly go into a hypnotic condition in which they are the subjects of the caprice, malice or criminality of all about them. Any one producing a condition like this must look upon it, even if he is only remotely responsible, with anything but satisfaction. The dangers of hypnotism are very pronounced, so much so that the matter has been made the subject of legislation in Russia, and public demonstrations of hypnotism are prohibited. The medical fraternity only are allowed to use it for so-called therapeutic purposes, and this only with three medical men in conjunction. In Belgium it is restricted to the use of medical men, and in no instance can it be applied to girls under 18 years of age. In France its public exhibition is prohibited and the medical department of the army and navy has been interdicted in its employ. We are to remember that in our own country, cases are on record where individuals have gone from the excitement of mesmerism into the agonies and delusions of insanity, and down through dementia into the irrecoverable depths of imbecility.

The two claims for hypnotism is that it is a therapeutic measure and that it may be an aid to psychical research. It may be admitted that in functional conditions and undeveloped aptitudes hypnotic treatment has and will have a sphere of action more or less legitimate, but to use hypno-

tism to remove a headache or a toothache is, as a German writer has put it, gunning for sparrows with heavy ordnance. Besides, hypnotism must be repeated at short intervals, and this brings in again the danger of the proceedings, because its repeated use, will lead undoubtedly to an increased susceptibility on the part of the patient, in itself a mark of mental deterioration and lack of self-control. The responsibility of the hypnotizer is of the greatest. To deprive a fellow being of his will power, be it only for a moment, and to substitute your own volition is in my estimation one of the greatest responsibilities in the whole range of human intercourse. Theologians tell us the Almighty himself has not assumed this prerogative, but has left man a free agent to work out his own salvation. The therapeutic use of hypnotism in conditions arising from gross pathological lesions is to be considered. Cases are on record where the pain of cancer has been controlled by hypnotism, of course the cancer has not been controlled, and in these cases it is comparable to the use of morphia for the control of pain. But if the disease runs a long course, I believe that mental deterioration will follow the use of hypnotic treatment, for it must be repeated daily. If hypnosis is, as some have claimed, an abnormal mental condition it is a serious question whether it will be of any value in psychological research. There are plenty of instances in which the will power has been blotted out, or the power of properly correlating ideas, and innumerable mental perversions have been studied, yet all these cases have not added very much to real knowledge of that group of diseases called psychological.

From all these considerations, and from the fact that abroad it has been found wise to control the exhibitions of hypnotism by stringent laws, I think that it is fitting for this society to adopt resolutions looking to the prevention of public exhibitions of hypnotism and to the limit of its employment to the medical profession. I do not wish to discourage hypnotizers, because I believe there is something in it of therapeutic value in proper cases, but I do believe those employing it should be protected and that those subjected to it should be thoroughly protected. A person should never be hypnotized except in the presence of reliable witnesses, and in the case of a woman, in the presence of her own sex. If these dangers I have mentioned are real the obligation upon the hypnotizer to acquaint the subject with them is as binding as in a case of laparotomy, and he should do this for his own protection. Yet if he does this as you will readily see very few will subject themselves to its influence. I desire to express my gratitude to Dr. Lacknerstein for his brilliant paper, which is the best résumé of the subject with which I am familiar.

DR. J. C. HOAG: I think we are all prepared to admit that Dr. Lacknerstein is an enthusiast,

and there is no doubt but that enthusiasm is necessary for the propagation of such ideas; but whether or not we accept hypnotism in its entirety, there is nevertheless, a great lesson to be learned from the practice of the hypnotists. To my mind the successful physician must necessarily be an enthusiast. If he does not believe in the efficacy of his remedies, if he gives his doses in a doubting manner, he can hardly expect to secure their best results. I remember as a student having Stillé's "Materia Medica" recommended to me for reading. I think if I had contented myself with Stillé and never read any other author I would have concluded my medical studies there. It is a ponderous work, and one reads it through without getting any definite ideas; and when one completes it he has nothing left which he can assert positively. So it is in our daily practice. If we look at the physicians who enjoy the greatest confidence of the community, we find they are the ones who have positive ideas and who impress their individuality upon their patients.

I have not seen any hypnotism done for a number of years, but I have seen some of it and I am prepared to believe that much of excellence lies in this method. Of course, there is always an element of danger in its practices, and the subject is still a comparative novel one, but so much am I impressed with its possibilities, that were I in Europe to-day, one of my first pilgrimages would be to Nancy.

I have never tried to hypnotize any one but I believe in the possibilities of hypnotism. I have read whatever has fallen in my way in this connection and have never yet seen anything, and presume there is nothing, that gives one a satisfactory explanation of its powers. I have read two or three brochures on the subject; one of which was by an Englishman, Dr. Tuckey. This observer had paid visits to Liébault, Bernheim, Charcot and others in France, and had returned to England very much prepossessed with the method. He had had considerable practical experience, and he gave an explanation of hypnotism, or at least led one up to a comparative explanation by an inductive method. This writer takes well-known facts with which we are all familiar and puts them together in such a way as to gradually lead one into the realms of the unknown, with the feeling that there was still something substantial under his feet; and he gets at the matter in some such way as this: For instance he takes the example of John Hunter, who said he could produce by will sensations in any part of his body by simply concentrating his thought upon them. Another writer said, that if twenty individuals would sit down in a room and look attentively at their little fingers a good many minutes with the idea that there might be something wrong there, most of them would have decided

sensations of pain. Tuckey gives a report of a physician with a decided mitral valve-disease of the heart, who felt no uncomfortable sensations except when he was examining patients with a cardiac lesion, during these times he experienced great discomfort simply by having his attention drawn to his own condition. We are familiar with such facts as increased secretion from the kidneys caused by emotion, and the effect of concentration of thought upon the various secretions; for instance the flow of saliva may be retarded or increased by emotion. Again we have the effect of icterus, from violent emotion, such as hate or jealousy. Statements of this kind have long been familiar, and we know that in point of fact there is a substratum of truth in such stories. A great many cases are on record of paralysis of a functional nature of long duration which have been entirely removed and permanently cured by the powerful impression made upon the patient. Such is the case of a young lady who had been confined to her bed for a year and who, on being suddenly informed that an accident had happened to her brother, rose from her bed at once and went to him and took care of him and was afterwards in good health. Cases of sea sickness are often relieved in the same way, if the passengers believe that the ship is about to sink or are otherwise seriously alarmed for their safety.

A familiar example is that of medical students, who while they are studying the accurate description of diseases, fancy they have the ones in which they are most interested. It is a matter of common observance that medical authors very frequently die of the disease to which they have given the most attention during their lives. In regard to the effect of fancy in producing disease we have such examples as occurred recently in the illness and death of the Emperor Frederick; there were epidemics of throat disease due entirely to fancy. Idleness is a great factor in these matters. People who have little to do keep their minds concentrated upon the functions of their bodies, and are often the victims of disease, as we see in the case of hypochondriacs. Now where perversion of function comes on in this way it is apt to lead to tissue alteration. It has been said too, that the fixation of attention upon a certain part of the body will render us conscious of functions that are usually performed in an automatic manner. Sir James Paget, says that temperature may be elevated by nervous excitement. In hysterical neurosis the temperature may rise exceedingly without apparent cause. In the same way anæmia may be caused by depressing emotions, while pleasant surroundings are promotive of health.

Again, in the case of cerebration, some portions of the brain may become temporarily inhibited in their action by the activity of others, as in the familiar example of paralysis from fear, paralysis

of motion. An example is related of a burly farmer who was in perfect health and whose friends agreed to pronounce him in poor health and to impress it upon him that he looked badly. One after another they approached him in this way, until finally the man took to his bed and was actually sick. I would like to refer to one or two other cases: for example that of a Frenchman of noble birth who was condemned to death; his friends wished to save him from the ignominy of the guillotine and obtained permission from the authorities to try an experiment upon him. He was blindfolded and his arm slightly pricked with a sharp instrument and warm water allowed to trickle over his arm, and at the same time remarks were made to the effect that the man was going to bleed to death, that he was rapidly sinking, etc., until he actually died of syncope. Then there is the curious example of the fakirs in India producing an apparent suspension of vitality, so that they have been buried in the earth for weeks at a time and then taken up and restored to usual health. Colonel Townsend performed a similar feat, although he was not buried, but animation was so completely suspended that five or six professional men could discern no evidences of life.

Now the argument is that if death may be produced in this way, may we not look for cure in the same manner? If sickness and death may be produced in this way so may regeneration and health. And there is nothing fanciful in the cures of believers by pilgrimages to Mecca, to the Ganges, to the shrine of Our Lady of Lourdes, or to the shrine in Mexico of the Lady of Guadalupe. Amulets are sometimes worn with perhaps very decided benefit. In olden times in England it was customary for the king at intervals to touch the people for the "king's evil," and it is on record that cures were made in this way and that the influence was one of great good.

Again, by attention the special senses may be sharpened, as in the case of the savage, the hearing is improved and the sight becomes very keen. In people who are obliged to pass judgment upon fabrics the sense of touch becomes very acute; the same thing is seen in the case of the blind. All these are examples of what may be done by what has been called *directed consciousness*. These are the main facts to which I wish to call attention, and by passing from familiar facts like these to the unfamiliar ones of hypnotism, we can see at least a constant progression. There are statements, to be sure, that seem utterly absurd, but as we approach them more closely we find more and more in them that appeals to the reason.

As an example of what has been done even by professional men in the way of injury to patients, I may cite the case of a woman who was readily hypnotized, so much so that it was almost im-

possible to tell in what condition she was at a given time, whether in her usual health or in one of the three hypnotic stages. This patient was kept under observation so long and was so often put in the hypnotic state, that she escaped, and being pursued was recaptured and experimented upon until she was finally sent by the government to the insane asylum. Her insanity was probably inevitable, but it seems to have been hastened by the ordeal which she endured at the hands of her attendants. I wish to thank Dr. Lackersteen for his interesting paper.

DR. D. M. BROWER: I wish to thank Dr. Lackersteen for his very interesting and enthusiastic paper. My experience with hypnotism has been quite similar to that of Dr. Church, and from observations that have run through several years I have come to the conclusion that there are very few people in the United States who are susceptible to its influence. I believe that the danger from the practice of this method of cure more than covers the possible benefits. I think the benefit is limited entirely to functional diseases, and it seems to me it must be limited to diseases that we have already reached by other means that are less dangerous. I most heartily endorse the suggestion of Dr. Church, that this Society declare its thorough disapproval of public exhibitions of this art. There has been going on for the last six months in London a public exhibition of hypnotism that attracts thousands; there is a similar exhibition in New York, and I presume we will have them here. I trust that this society, while not condemning the method as a curative measure, will put out a signal of danger, and at least insist upon some sort of legislative action that will limit its use to physicians under certain restrictions, and will absolutely prohibit public exhibitions of this dangerous method.

DR. T. P. SEELEY: I have but a word to say on this subject. I happen to have had a little experience in 1849 when I was a student in college, before I attended a medical college. The subject of hypnotism attracted considerable attention and I had the curiosity to try it, and found I was capable of hypnotizing, or mesmerizing, as we called it then. In one case I hypnotized a young lady, put her in a condition of anæsthesia, in which state she had a tooth drawn without any more apparent feeling than if she had been under chloroform. I hypnotized several individuals, among them one or two clairvoyants, and I was perfectly convinced at the time that there was something in mesmerism. I have always thought that the truth should be known and that the medical profession should investigate it. There ought to come no great harm from our knowing the truth; if there is a great deal of evil in this thing, there are evil persons, who will take advantage of the want of knowl-

edge of professional men. I believe there might be some knowledge gained by scientific investigation that would be of advantage to the whole community.

I am very glad to have heard Dr. Lackersteen's statements. I have not pursued the question and gained the knowledge I might have on this subject; I have used it at times in the cure of headache and for some other purposes. I give my testimony as to facts I knew forty years ago, and I do not believe the light should be concealed but that medical men should investigate and find out what the truth is.

DR. M. H. LACKERSTEEN: I should feel disposed to suggest the appointment of a committee to examine into the uses of hypnotism; this committee is to prevent the abuse of it. That is looking at it from a forensic point of view in order to save society from the ignorant sensationalist; but I think a body of competent physicians should be appointed to investigate the subject in order to ascertain to what extent it might be used in medicine, and if there are any points of danger—which we can all imagine; we must first demonstrate and prove the conditions of danger so that harm can be avoided. As to my supposed enthusiasm in the matter, I am simply an experimental hypnotizer of only two years' standing. In my travels over this globe I have kept my eyes open, and have seen this thing going on around me; I have seen people who have denounced it, and in five minutes afterwards proved as susceptible to suggestion as possible. I recall the case of a lady who had pneumonia and sent for me. I told her that she no more had pneumonia than I had. Her nephew, who was a pretty well advanced medical student, had examined her and assured her that she was very ill with pneumonia—he had a great deal of knowledge but very little wisdom—fortunately she did not believe him. I did not give her any medicine, it was one of those self-limited diseases, and she soon improved. Any amount of medication on my part would very likely have done more mischief than good.

When I was on leave in 1865, in Cashmere, there were seventeen physicians on leave there. The cholera broke out in the Maharajah's domains. We received nominal returns of the sick, fresh cases, those who remained, and those who died. And the whole of the capital was supposed to be divided into seventeen divisions with a doctor in each division; and we volunteered our services. A large part of the district was overlooked, and in this part, controlled by native doctors, there were 50 per cent. of deaths to 50 per cent. of cures, while some of our energetic boys had only 17 per cent. of cures. In reference to diseases about which we know very little, such as cholera, and of self-limiting diseases, of which we know more, great latitude of treatment is permissible. I had a case of a boy with scarlet

fever, a lad ten years old, a spoiled boy. I was sent for in the morning and found his temperature 104° , his pulse 120, there was a scarlet rash on his face. I hypnotized him and sent him to sleep for six hours, first assuring him that he would be perfectly cool and comfortable when he awoke; and so he was. His temperature was normal, but the rash had gone down to his abdomen and as soon as he woke up he urinated to the extent of nearly a pint, and his bowels acted. I gave him as much water as he wanted to drink, hypnotized him again and sent him to sleep until the next morning, but the disease progressed all the same. This subject is very interesting and in some cases I dare say hypnotism might so affect the secretions and nutritive functions as to alter the pabulum of the microorganisms, and in that way influence their fecundity. We do not know everything, and I think we have a right and a duty to investigate and learn; but to be dogmatic about things of which we are ignorant I think is not worthy of us as a profession. As far as investigations are concerned I shall be glad to lend my aid in carrying out anything with the help of others, but I think we should try to understand this thing, there is a great deal in it to be known; and so far as knowing it but interdicting its practice is concerned, it reminds me of the inscription in the University of Egypt which says, "My son, learn magic but do not use it."

INTERNATIONAL MEDICAL CONGRESS.

On the Constant Galvanic Current in Gynecology.

(Translated from the French for THE JOURNAL.)

At the International Medical Congress at Berlin in August, Dr. Apostoli, of Paris, read a paper before the Section on Obstetrics and Gynecology, August Martin, of Berlin, President, on the use of "The Constant Galvanic Current in Gynecology," in which he arrived at the following general and summary conclusions:

1. The constant galvanic current finds its principal indication in gynecology in endometritis and fibroma; sovereign against circulatory and painful affections (amenorrhœa, dysmenorrhœa, and metrorrhagia) it is a powerful agent in arresting the evolution of benign neoplasms and in aiding in the absorption of peri-uterine exudates. It exercises a very salutary resolvent action in many peri-uterine phlegmasiæ and in certain catarrhal ovaro-salpingites, but it is inefficacious and even injurious in high dose, especially if the intra-uterine pole is negative, against the suppurative phlegmasiæ of the appendages.

Its variable intolerance, which will increase with the inflammatory state of the appendages, ought to serve as a valuable means of diagnosis to enable one to determine the existence and na-

ture of unknown or merely suspected peri-uterine liquid accumulations (bloody or purulent) and ought to serve, in this case, to hasten a delayed or declined surgical intervention.

2. The effects of the constant current are polar and inter-polar—the trophic and dynamic inter-polar action, which increases as the square of the intensity developed, is superadded to the polar action; this utilizes first each pole for a different end, as Apostoli has shown, then the calorific action developed by the passage of the current (for stimulating the interstitial circulation), and finally the antiseptic action of the positive pole, of which Apostoli and Laquerrière have given a recent experimental demonstration.

3. *High galvanic applications* employed in a variable manner, above 50 milliamperes, according to the tolerance of the patient, and the various clinical indications, form the fundamental basis of Apostoli's method, and find justification: *a.* First in the utilization of the *circulatory drainage*, the direct consequence of the calorific action due to the resistance to the passage of the current, and proportional to the square of the intensity; *b.* In the *antiseptic* or microbicide action, which increases with the intensity developed; *c.* In the *rapidity* and *efficacy* of the effects produced, which are proportional to the square of the electric energy, according to a formula analogous to that of the measure of the energy of other natural forces: $q. = \frac{1}{2} m. v^2$; *d.* In the *easier general application* of the method to obstinate cases (hard fibromata and violent sub-peritoneal endometrites), and in young women; *e.* In the *prevention of return*, which, other things being equal, will be less to be feared, as the application shall have been the more intense.

4. If the vaginal application of the galvanic current (which is the method devised by M. Chéron for fibromas only, and since applied by A. Martin, Brachet, Mépière, Onimus, Carpenter, Mundé, etc.) gives results, they are very inferior to those of the *intra-uterine* applications, which must remain the *preferable method*: *a.* Because it utilizes, before all, the maximum of the current developed and of its energy; *b.* Because it utilizes the antiseptic action of the positive pole, which is wholly local, and which is consumed in the inter-polar circuit, and at the level of the negative pole; *c.* Because it often lays under contribution the derivative and caustic action of the intra-uterine application, thus treating by the same operation, either the simple endometritis or the endometritis, which, so often, complicates both fibromata and peri-uterine phlegmasiæ, and so assuring a more rapid, more complete, and more permanent cure; *d.* Because it conduces, better than vaginal applications, to the diminution of pain and renders the employment of high doses more tolerable, and finally assures a greater efficacy in making possible an increase of the ap-

plied intensity and of the sanguineous irrigation, which it induces.

5. Vaginal galvano-punctures, made at a depth of some millimeters (from two to five), by means of a filiform gold trocar, completely insulated except at the point, form the often very salutary complement of the intra-uterine therapeutics, originated by Apostoli, in better localizing the galvanic action and in rendering more efficacious the application of small or medium doses in certain cases.

6. The innocuousness of his intra-uterine therapeutics is established, first, by the parallel innocuousness of the chemical and bloody methods of intra-uterine treatment, and especially by the numerical data of statistics collected all over the world, and in particular by his own: From July, 1882, to July, 1890, he has made 11,499 galvanic applications, which are classified as follows: 8,177 positive intra-uterine galvano-cauterizations, 2,486 negative intra-uterine galvano cauterizations, 222 positive vaginal galvano-punctures, 614 negative vaginal galvano-punctures.

He has treated 912 patients, comprising 531 fibromata, 133 simple endometrites, and 240 endometrites complicated with peri-uterine phlegmasiæ, of which there were seen in *clinique* 313 fibromata, 70 simple endometrites, 163 endometrites complicated with peri-uterine phlegmasiæ; in the *office or city*: 218 fibromata, 63 simple endometrites, 85 complicated endometrites.

He has had three deaths attributable to operative errors (two galvano-punctures, one for sub-peritoneal fibroma and the other for an ovaro-salpingitis—and one galvano-cautery for ovarian cyst mistaken for a fibroma). He has seen thirty cases of pregnancy occur after intra-uterine galvanic applications.

BOOK REVIEWS.

A SYSTEM OF ORAL SURGERY. Being a treatise on the Diseases and Surgery of the Mouth, Jaws, Face, Teeth, etc. By JAMES E. GARRETSON, A.M., M.D., D.D.S., President of the Medico-Chirurgical Hospital and Emeritus Professor of Oral and General Clinical Surgery in the Medico-Chirurgical College; Dean of the Philadelphia Dental College; Surgeon in Charge of the Hospital of Oral Surgery; Member of the Philadelphia County Medical Society, etc. Illustrated with numerous wood cuts and steel plates. Fifth Edition, thoroughly revised, with additions. Philadelphia: J. B. Lippincott Company; London: 10 Henrietta Street, Covent Garden. 1890. Price \$9.00.

Those who have been familiar with the former editions of this treatise upon oral surgery will anticipate that in the preparation of a new edi-

tion the author will have so re-cast and extended his labors as to include the latest literature, the latest improvements and the most approved methods pertaining to oral surgery and dentistry. In this respect there will be no disappointment. The purpose of the volume is to show what dentistry is, when practiced from the stand-point of oral surgery.

The present work contains over thirteen hundred octavo pages. Through the courtesy of other authors, by cuts which are familiar, and by the help of a large number of original drawings, it is well illustrated. In appearance, it is creditable to the publishers.

The description and surgical anatomy of the head including its muscles, vessels, nerves and glands occupy the first one hundred pages. Then follow chapters upon the mouth, the teeth, and upon dentition. The lesions of first dentition and their treatment constitute a chapter of value to the general practitioner as well as to the specialist. Another hundred and more pages are devoted to second dentition, to diseases of the teeth and to their treatment. Then follow a series of chapters upon operative and prosthetic dentistry, with ample illustrations.

The writer associates with oral surgery facial and pharyngeal disease, diseases of the nose, nerve lesions, tumors of the mouth and face, etc., and concludes with a chapter upon medical diagnosis, preliminary to the study of anæsthesia and the use of anæsthetics and antiseptics. The mastery of the subjects here considered will bring the physician and the dentist into inseparable relations, upon a common ground.

MISCELLANY.

LETTERS RECEIVED.

Dr. W. T. Easley, Greenville, Ill.; Dr. W. E. Brown, Gilbertville, Mass.; Dr. T. D. Brooks, Piqua, O.; Dr. S. L. Jepson, Wheeling, W. Va.; The Traveler's Insurance Co., The Plimpton Mfg. Co., Hartford, Conn.; Dr. X. C. Scott, Cleveland, O.; Dr. R. J. Duglison, Dr. J. B. Imhoff, The S. S. White Dental Mfg. Co., Med. Dept. University of Pennsylvania, Dr. W. B. Atkinson, Philadelphia; Dr. G. W. Lowry, Hastings, Mich.; Dr. D. H. McMasters, Pryorsburg, Ky.; W. H. Davis & Co., Keokuk, Ia.; Henry Gray, F. W. Norstrand, The Home-Maker Co., D. L. Dowd, Richard Terhune, I. Haldenstein, J. H. Bates, Thos. Leeming & Co., Jas. F. Madden, New York City; Dr. F. H. Wiggins, Fitchfield, Mass.; Dr. C. W. Rook, San Antonio, Texas; Dr. W. J. Delahanty, Worcester, Mass.; Dr. L. S. Trowbridge, Detroit, Mich.; Women's Medical College, Dr. C. A. L. Reed, Cincinnati, O.; J. H. Chambers & Co., St. Louis Medical College, Battle & Co., Dr. H. C. Dalton, St. Louis, Mo.; University of Michigan, Ann Arbor, Mich.; Dr. W. C. Townes, Dr. Frank Trester Smith, Chattanooga, Tenn.; Dr. C. G. Bacon, Fulton, N. Y.; Dr. W. M. Orr, Fall Creek, Tenn.; Dr. W. D. Hamilton, Columbus, O.; Dr. A. W. Campbell, Montreal; Milwaukee County Hospital, Wauwatosa, Wis.; Chicago Medical College, Chicago Polyclinic, Dr. A. Church, Dr. A. E. Rockey, Chicago; Dr. C. Glisan, Port-

land, Ore.; Dr. Jerome Cochran, Montgomery, Ala.; Dr. J. D. Middlebrooks, Brownsville, Ga.; Dr. J. N. Russell, Mason, West Va.; Dr. W. J. Haine, West Farmington, O.; Dr. L. W. Baker, Baldwinville, Mass.; Dr. C. S. Stewart, Amite City, La.; Dr. Carl H. von Klein, Dayton, O.; Dr. T. Lothrop, Buffalo, N. Y.; Dr. J. G. McDougal, New Lexington, O.; Dr. D. F. Rugg, Hartland, Vt.; Dr. A. Vander Veer, Albany, N. Y.; Dr. F. M. Rockefeller, Anaconda, Mont.; Dr. C. E. Coulter, Ogden, Utah; Dr. J. S. Lindley, Seneca, Mo.; Dr. G. W. Miles, Oneida, N. Y.; Dr. J. B. Walker, Effingham, Ill.; Dr. S. B. Rowe, Rolla, Mo.; C. A. Kirkley, Toledo, O.; Doliber-Goodale Co., Boston; Dr. V. McDavitt, Quincy, Ill.; Dr. W. L. Williams, Ridgway, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 8, 1890, to November 14, 1890.

Capt. Louis A. La Garde, Asst. Surgeon U. S. A., detailed as member of board for duty in connection with the World's Columbian Exposition, and will report by letter to Major Clifton Conley, Ordnance Dept., member of the Board of Control and Management of the Government exhibit to represent the War Department. Par. 1, S. O. 260, A. G. O., Washington, November 6, 1890.

Capt. William D. Crosby, Asst. Surgeon U. S. A., is granted leave of absence for four days. By direction of the Acting Secretary of War. Par. 2, S. O. 259, A. G. O., Washington, November 5, 1890.

Lieut. Col. Charles Alexander, Surgeon, and Major Johnson V. D. Middleton, Surgeon, are appointed members of a board of officers, appointed to meet at the call of the senior officer thereof, at the rooms of the Board of Engineers, Army building, New York City, to examine such officers of the Corps of Engineers as may be ordered before it with a view to determining their fitness for promotion, as contemplated by the Act of Congress approved October 1, 1890. By direction of the Secretary of War. Par. 4, S. O. 261, A. G. O., Washington, November 7, 1890.

Col. Basil Moore, Surgeon, and Major George M. Sternberg, Surgeon, are appointed members of a board of officers, appointed to meet at the call of the senior officer thereof, in San Francisco, Cal., to examine such officers of the Corps of Engineers as may be ordered before it, with a view of determining their fitness for promotion, as contemplated by the Act of Congress approved October 1, 1890. By direction of the Secretary of War. Par. 5, S. O. 261, A. G. O., Washington, November 7, 1890.

Major Henry McElderry, Surgeon, extension of leave of absence on account of sickness granted in S. O. 214, September 12, 1890, from this office, is further extended two months on surgeon's certificate of disability. By direction of the Secretary of War. Par. 28, S. O. 263, A. G. O., November 10, 1890.

Major Stevens G. Cowdrey, Surgeon, leave of absence granted in S. O. 112, Dept. of Ariz., October 24, 1890, is extended fifteen days. By direction of the Secretary of War. S. O. 263, A. G. O., Hdqrs. of the Army, Washington, November 10, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 15, 1890.

Surgeon Thomas Owens, ordered to the Museum of Hygiene at Washington, D. C.

Surgeon H. M. Martin, detached from the receiving ship "Wabash," and ordered before Retiring Board.

Surgeon P. M. Rixey, continued in charge of Naval Dispensary at Washington, D. C., until November 20, 1891.

P. A. Surgeon E. H. Green, promoted to Surgeon November 10, 1890.

Surgeon Howard Smith, placed on the Retired List November 10, 1890.

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ORIGINAL ARTICLES.

ON THE RELATIVE VALUE OF MERCURY AND IODINE COMPOUNDS IN THE TREATMENT OF SYPHILIS.

Read at the opening of the Discussion in the Section of Dermatology and Syphilology, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY L. DUNCAN BULKLEY, A.M., M.D.,
OF NEW YORK.

Syphilis is one of the most important diseases which afflict mankind, and the study of its various aspects and conditions is one of the most interesting which can engage human thought. The pathology of syphilis, in all its stages, reaches deeper than that of any other known disease, while its symptomatology may at times extend into the domain of innumerable other affections; it may stimulate in certain cases, in various organs, a great variety of diseased conditions, and may complicate a still larger number.

In opening briefly a discussion of the treatment of syphilis it is evident, therefore, that we cannot at all enter into the subject of the disease itself, nor of the treatment of all the various aspects and phases presented by the same; and, therefore, from the nature of the case it will be difficult to deal with the question before us as fully and accurately as could be desired. But, on the other hand, the indications for treatment vary so greatly at different stages of the disease and in different individuals, that any discussion of the relative value of mercury and iodine compounds in syphilis must take into consideration, to a greater or less extent, other factors than simply the existence of syphilis in the subject to be treated. In other words, "the treatment of syphilis" has two aspects: first as to the treatment of the disease itself, the nullification of the poison with which the system has become infected; and, second, as to the treatment of the diseased condition, or the particular manifestation of the action of the poison, in some special organ or part of the body at a particular time; it is upon the recognition of these two aspects of the question that a sound therapeutics of syphilis must rest.

Now as regards the treatment of the disease it-

self, the neutralization of the poison, so that it cannot be again communicated to another, or be transmitted to offspring, the opinion of modern observers agrees, I think, that mercury alone possesses the true anti-syphilitic power, while iodine and its preparations exert very little if any influence in this direction; that is, that in the acute, infectious period of syphilis the latter if used alone could not control the development of the disease, nor hinder or check its contagious properties, whereas mercury does possess this power in a striking, although not always in an absolute and perfectly satisfactory degree.

In regard, however, to the effect of iodine and its compounds upon many of the lesions of syphilis there can be no question whatever, indeed they are often absolutely indispensable in the treatment of syphilis in some of its stages or manifestations, and in many instances, especially in syphilis of the nervous system and of some of the internal organs, they alone can rescue the patient from impending death.

What, then, are the indications for the use of these two powerful remedies in syphilis, for that I believe is the direction which our discussion should take, rather than as to the *relative* value of the two drugs; both are equally valuable, each to serve their particular end, while their combination will be more often even more serviceable than either alone. We can really no more speak of the relative value of mercury and iodine in syphilis than we can of the relative value of the two portions of a pair of scissors; alone each may be of value to a certain degree, but together, when properly used, they form an instrument which will sever the Gordian knot, and solve the often difficult problem of the proper cure for certain lesions of syphilis. It will be understood that I am here arguing for the well-known *mixed treatment of syphilis*; this I think, (and see from experience in cases which have been treated by others) is far too often neglected in favor of the plan advocated by some writers, of using each remedy separately.

But, although I have just spoken, and wish to speak, strongly in favor of a mixed treatment in many cases of syphilis, especially in the later stages, I also recognize the fact that there are periods and conditions of the disease when mercury

or iodine may be best used alone; these we will briefly consider.

During the very early stages of syphilis iodine, with its compounds seems to exert very little effect, whereas the results following an active and efficient mercurial course are often most striking and satisfactory.

When by a well defined hardening, or by marked local or general adenopathy, or by an early eruption, or by confrontation or other means, the diagnosis of a primary sore, or true chancre of syphilis is determined with certainty, an active mercurial course should be at once instituted, and iodine is uncalled for, and some think it to be harmful. The simplest, and in many respects the best treatment is then by means of the grey powder of mercury and chalk, which can be conveniently administered in one grain tablets. These may be given, one every two hours, or even two at a time, until the effect of the mercury is seen, either in the rapid healing of the chancre, or in the subsidence of other symptoms, or, until a slight mercurial influence has been obtained in the mouth; the dose may then be lowered, by giving it every three or four hours. If now, the individual seems to resist the effect of the drug, the strength of the mercurial treatment can be increased by the addition of a few mercurial inunctions, or an occasional mercurial vapor bath. It is needless to say that all this should be carried far short of any actual salivation, and with the appearance of any marked tenderness of the gums or excessive flow of saliva, the doses of the mercury should be reduced to one-half, and then in a few days be slowly increased; salivation, if it be at all severe, rather hinders the treatment. Careful attention to the mouth, and the free use of chlorate of potash as a gargle and mouth wash should never be forgotten: but, on the other hand, I must enter my protest against the practice advocated by some of having the teeth carefully gone over by the dentist as a prophylactic, for I can never think it justifiable to expose another, and perhaps many through him, to contagion from the abundant and infectious mucous patches liable to be found in the mouth at this early stage of syphilis.

Mercury used locally is also of the greatest value in the early period of syphilis, and calomel freely dusted on, or black wash kept freely applied, or a mercurial plaster over the chancre will do much to hasten its disappearance, and the arrest of the disease.

There are other means of using mercury for its general effect in this early period of syphilis the merits of which I can hardly discuss here. The bringing of the system under influence of the drug can be accomplished by frequent mercurial vapor baths, also by mercurial inunctions alone; likewise by the hypodermic injections of mercury and oil, or its various salts, as has been

recommended by many: but, practically, in the majority of instances the drug can be introduced more pleasantly and quite as satisfactorily by the stomach, and my preference is decidedly for the grey powder, used as described, although the bichloride will often act kindly, though more prone to disagree with the stomach.

If now, the patient with syphilis remains faithful to this treatment, and the chancre heals soon, and other symptoms either fail to appear or are removed quickly, there is naturally no call for iodine or its preparations, although some would prefer to give a mercurial combined with iodine, the red or green iodide later in the course of the treatment; this, it will be understood, should, in accordance with the best modern views, be continued (with intermissions perhaps) for two years, or even longer, if troublesome symptoms or lesions have shown themselves.

We come now to consider the proper place for iodine and its combinations in the treatment of syphilis.

Unfortunately in but a small proportion of the cases of syphilis will the patient have had the satisfactory course alluded to above. For one reason or another, full and efficient treatment has not been carried out by the large majority of persons who have received syphilitic infection, and at varying periods in the course of the disease lesions of more or less troublesome and serious character will occur on the skin, mucous membranes in the bones, muscles, nervous system, viscera, or other portions of the body. It must be acknowledged also that in a certain number of individuals some of these graver manifestations of the disease will appear even during the course of and in spite of a thorough mercurial treatment, even quite early in the disease. If mercury is now given, and even pushed, for these more definite and serious manifestations of the disease, what is the result? They will often even increase in severity and extent, and the patient instead of being benefited is harmed in many respects by the treatment instituted and pressed ever so vigorously.

Now comes the action of iodine, which will sometimes seem almost miraculous; lesions which before had been stationary, or had even increased in severity will seem to melt away, and a disease which had before been rebellious, yields to medical skill and knowledge, and it may be that a life which before was threatened, is rescued, simply by the action of iodine or its compounds. This experience has been verified by numberless observers, and may occur to any one using the remedies properly when opportunity offers; this may, of course, very rarely happen to the general practitioner, but is not so very uncommon to the consultant or to one much occupied with syphilis.

Many writers advise the compounds of iodine to be given alone, unaccompanied by mercury, and the accounts of the enormous doses which have

been at times administered would astonish any one accustomed only to the ordinary dose of a few grains, as commonly prescribed. In certain rare and neglected cases, where grave nerve lesions from syphilis threaten life, such doses, running up into many hundred grains of the iodide of potassium daily, have undoubtedly saved life, and may be necessary; the remedy certainly should be pushed to the fullest extent possible when occasion seems to demand.

But, on the other hand, I am convinced, from not a small experience in syphilis, and from the results in my share of grave and threatening cases, that these exceedingly large doses are rarely if ever required, provided that other means are intelligently and judiciously employed; in other words, I believe that even in the latest stages of syphilis, and in its gravest manifestations, a certain amount of mercury will certainly aid in overcoming the disease and in removing the lesions. I know full well that in certain cases, and at certain times mercury will not be well borne, and the system will seem even to become lowered under its use: but there are very rare instances, and if combined with proper bitter tonics and iron, mercury can be borne and will aid in the treatment of all stages of syphilis. But, of course, it must be used carefully and judiciously in those of broken down habit, and often other remedies, mineral acids, etc., are required to secure the best results.

My more common method of treatment of the later manifestations of syphilis is by means of the old mixed treatment, where a minute dose of mercury is combined with a moderate dose of an iodide, with iron and a bitter tonic; if the symptoms do not yield, the active elements of the treatment are increased until the desired effect is produced. The mercury in the mixture is first slowly increased, $\frac{1}{8}$ of a grain of the bichloride of mercury, to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, or possibly more; this is especially the case in lesions occurring during the first year or two after infection. For lesions occurring later in the disease, or when others still prove rebellious, the amount of the iodide is increased, the other features of the treatment remaining the same; or possibly being also added to.

Thus, the mixed treatment being continued after each meal, a watery solution of the iodide of potassium, sodium, or ammonium, or a combination of them, is given in Vichy water, between the meals, beginning, say, with fifteen grains three times daily, and augmenting the dose daily, until the symptoms yield; in some instances the syrup of hydriodic acid between meals will act better, or the compound liquor iodi, or the iodide of starch may be employed.

If early in the disease, and the mercurial element seems to be required, the mixed treatment may be added to by means of occasional mercurial baths or inunctions. But, personally, I have

not been satisfied with the plan of giving a mixed treatment by means of administering the mercury and iodide entirely separate, as advised by some writers; I feel confident that better results can be obtained by combining them together in proper proportions in one dose, and then augmenting the strength of one or the other element, in the manner above described, to meet the indications of the case.

My remarks have been somewhat personal, in opening this discussion, but I trust that they will be taken as intended, as a contribution of experience and opinion to this most interesting subject. If each will contribute his personal mite it will be better than if the impersonal opinion of others was quoted.

FIVE CASES OF REMOVAL OF THE JAW FOR TUMOR.

Read in the Section of Dental and Oral Surgery, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY WILLIAM D. HAMILTON, M.D.,
OF COLUMBUS, OHIO.

The cases that form the subject of this paper have come under the observation of the writer in his service at the Mount Carmel Hospital within the past three years. Three had to do with the superior and the remaining two with the inferior maxilla. There were four females and one male. The youngest patient was twelve, the eldest fifty-five years of age.

In conversation with the eminent surgeon, Mr. Thornley Stoker, of Dublin, last summer, it was learned that one of his patients for whom he had recently extirpated the upper jaw for sarcomatous disease was a woman eighty years old. A still more interesting fact was elicited: that she was discharged from the hospital cured in a fortnight.

Cases of epithelioma beginning in the soft parts will not be herein considered. In this department of oral surgery we are confronted with certain facts at the outset: 1. Difficulty in maintaining anæsthesia; 2. The impracticability of observing with nicety antiseptic details; 3. The tendency to hæmorrhage and shock.

It is to be hoped that rectal anæsthesia will some day be reduced to a practical method, so that an irritating fluid like ether may be prevented from entering the bowel in the liquid state, where it excites such great disturbance, or even perhaps a fatal bloody diarrhœa.

The renewal of the anæsthetic on account of the returning consciousness of a patient upon whom such an operation is being performed is a most embarrassing and pathetic necessity. It frequently means the occurrence of vomiting and the loss of invaluable time. The resort to a preliminary tracheotomy, while possessing certain advantages as a mode of administration, is by no

means free from danger to the lungs and air passages which it is intended to protect, while its performance must add materially to the shock.

Unfortunately the mouth is frequently found to be in an unwholesome condition. The irregularities of the growth, which may prevent separation and closure of the jaws, the occasional existence of a foul ulcer, that has been teased and irritated by opposing teeth, the numerous hiding places for septic matter in such a cavity—all these considerations make it a trap for filth and enhance the difficulty of preventing suppuration. It is all the more incumbent upon the surgeon, however, to aim at thorough cleanliness. There should be liberal irrigations with a harmless antiseptic lotion like boracic acid in an aqueous solution, and in this way all removable matter disposed of in the five days prior to operation.

The strict observance of extrinsic antiseptic details is as clearly imperative in this as in other surgical procedures.

As a preliminary step, with a view to preventing hæmorrhage in removing some of these growths, the common or external carotid artery has been tied. While benefit may sometimes be derived from it, preparatory deligation was not seriously contemplated in any of the cases enumerated. In dealing with the facial artery and vein, the knife was carried quickly down to the bone dividing them clean at one stroke. Their prompt seizure with hæmostatic forceps prevents the loss of much blood and simplifies the operation. Digital pressure by an assistant is available during their isolation.

With reference to shock it may be said that time is a most important element. In order to minimize the duration of the ordeal, scrupulous care should be taken to have a simple reliable armamentarium at hand consisting of strong instruments in perfect condition. For completing the division of bone, a pair of powerful straight pliers with short jaws and long handles, giving great leverage, is invaluable.

For ligating vessels, properly prepared silk is preferable. A precaution that should never be neglected is to transfix the tongue with a coarse silk thread; the ends being tied together should be held by an assistant. It is perhaps needless to observe that anaesthesia should be *very profound* before beginning.

Again it is a rule applying to all such undertakings, to postpone entering the cavity of the mouth as long as is consistent with method. Therefore the bone should be freed as extensively as may be before the mucous membrane is divided. In this way blood can often be kept outside of the throat until the operation is well-nigh completed.

Case 1.—Adeno-Sarcoma of Lower Jaw; Removal of Left Half of Bone; Recovery.

Miss N. M., sent by Dr. A. M. Dent, of Co-

shocton, Ohio, was 27 years old when first seen by the writer. In July, 1884, she ran against the edge of a door in the dark and the left side of the face was struck. Some swelling followed which never receded. From the time of the injury until September, 1888, when she was admitted to the hospital, her face grew larger. The disease first appeared in front of the left masseter muscle and the contiguous portion of bone gradually became implicated. She stated that it had grown more rapidly since October, 1887, than during the preceding two years. A slight oral hæmorrhage took place then and pain had annoyed her most of the time since. The latter was attributable to the continual bruising of the tumor by the upper teeth. A surgeon having been consulted some months previously, had incised and scraped the prominent outer surface of the jaw, and with negative results. The month preceding the second operation had been of rapid progress of the growth. Painful sores existed where the upper teeth impinged upon it. The left side of the face had a rounded appearance, the cheek being prominently bulged outward. The mouth was encroached upon both posteriorly and toward the median line, so that it could only be opened for distance of seven-eighths of an inch. The ramus was extensively involved.

Operation, September 30, 1888. Dr. F. W. Blake and Dr. A. N. Dennison assisted. The usual incision was made and extended in the line of the old cicatrix. A clear exposure of the bone being thus secured, the dissection was completed with guarded scissors, care being taken to cut *on* the tumor throughout. While detaching it from the cheek, several sub-cepts of which it was partially composed, discharged their contents into the wound, the fluid being of a yellow, viscid character. The subsequent steps of the operation including the disarticulation and the median section with the saw were readily accomplished. Hæmorrhage was tolerably free but easily controlled. Interrupted silk sutures were used in uniting the mucous lining of the cheek, and continuous gut for the outside. A rubber drain was inserted at the most dependent point and allowed to remain for several days. Shock was well-marked but yielded promptly to proper measures. Some suppuration of the wound with febrile movement ensued and retarded her recovery. She was discharged four weeks later.

Microscopical examination showed it to be an adeno-sarcoma that had probably developed centrally, expanding the plates of the bone, parts of the growth having undergone cystic degeneration.

Case 2.—Osteo-Sarcoma of Right Upper Jaw; Excision; Recovery.

P. C., æt. 16, from Johnstown, Licking Co., Ohio, was sent by Dr. C. R. Lockwood of that place. He had always enjoyed good health. In the early part of 1884, the right side of his face

was seen to be getting larger, especially in the neighborhood of a defective upper molar tooth, from which the disease seemed to emanate. The growth was gradual until early in December, 1888. He entered the hospital February 8, 1889, at which time the right cheek was the seat of a prominence, extending laterally from the molar bone to the side of the nose, and vertically from the angle of the mouth to the floor of the orbit. The latter was lifted up and the right eye slightly elevated. The hard palate was moderately depressed. There was no sign of fluctuation at any point.

Diagnosis.—A tumor of the upper jaw which had of late taken on such rapid growth that removal was deemed advisable.

Operation.—February 11, 1888. The entire right upper jaw was excised by the external flap method. An incision began opposite the inner angle of the eye, going vertically downward, encircling the wing of the nose and through the lip in the median line. Following again the natural fold between the cheek and the lower lid, it proceeded along the rim of the orbital floor as far as the molar bone. The flap could then be readily raised and the cheek was reflected from within outwards, thus securing a good exposure of the tumor. An incisor tooth was then extracted, and the saw was carried through the hard palate and the alveolus of the missing tooth, the nose being pushed out of the way. A section of the nasal process of the upper jaw and molar bone followed, the latter line of division being continuous with the sphenomaxillary fissure. The bones were of ivory-like hardness, so that their division was very tedious and difficult. Large pliers were forced into the notches made by the saw, thus loosening the growth, so that the pterygoid process could be broken and the soft palate cut away. The patient behaved badly under ether, a large quantity of which was required. The extreme hardness of the bones and the time consumed in dealing with them added to the delay. The wound was dusted with iodoform, and stitched with gut inside and out and no drain was used. The shock was very profound. Evidently considerable concealed hæmorrhage had occurred for the patient vomited a large amount of clots and bloody fluid. The lower extremities were elevated and injections of warm water and brandy were frequently given. Hypodermics of morphia and brandy were resorted to, dry heat was liberally applied and after two hours of persistent effort, vomiting ushered in reaction. Union was tolerably firm in 30 hours and his convalescence was uneventful.

Case 3.—*Large Round-Celled Sarcoma of Right Upper Jaw; Excision; Recovery.*

Mrs. M. A. T., æt. 55. Residence, Napoleon, Henry Co., Ohio. In July, 1888, a swelling was first observed over the right molar bone, which

continued to grow until February 27, 1889, the date of her admission. Had had nose-bleed once, a month before. Her health had always been good, and the growth was only slightly painful. The physical alterations and the change in facial expression were about such as were seen in Case 2.

In view of the rapid development of the tumor, excision was advised and was done March 2, 1889. Aside from the fact that the incision was longer, the plan adopted was the same as that in Case 2. Much less difficulty was experienced in making the sections than in the former case, the bones being much softer. The wound having been carefully sutured, neat apposition was secured. External hæmorrhage was very slight. One-third of a pint of clotted blood was vomited after the completion of the operation. Shock was hardly appreciable and the pulse, although somewhat weak, was slow and regular. She passed a good night, and after the first week had no febrile disturbance. She was discharged March 24, three weeks after the operation.

Case 4.—*Sarcoma of Left Upper Jaw; Excision; Recovery.*

Gertrude W., æt. 12, brought by Dr. Chambers, Dentist, from Newark, Ohio. Eighteen months before, when cutting a molar tooth, she had observed that her left cheek was prominent. Two months before entering, she had had a single nose-bleed. She was in good general health. The floor of the orbit was elevated by the growth, and the left side of the nose somewhat smaller and crowded forward. The roof of the mouth was depressed on the side involved. On November 6, 1889, the external flap operation was done in the usual manner. She had no unpleasant symptoms and was discharged well in a fortnight.

Case 5.—*Recurrent (Myrtoïd or Giant Cell) Sarcoma of Lower Jaw; Excision of Right Half; Recovery.*

Mrs. A. W., æt. 36. Residence Corning, Perry Co., Ohio. In 1875 she had undergone an operation for epulis of the lower jaw, in which several teeth with their alveoli were removed. Suspicions of recurrence were aroused early in November, 1889, and she entered the hospital three weeks later. A growth, central to the right maxilla had evidently started at or near the angle, causing the bony plates to spread. It was growing forward on the body and upward on the ramus. It had of late become painful, and excision was advised and done on November 30, in the usual manner. The anterior section was easily accomplished, as only the rim had been left when the epulis had been ablated. Care was observed in securing the vessels, but notwithstanding this fact, persistent and rather free secondary hæmorrhage occurred during the night following the operation, which necessitated the removal of a few stitches and reopening the wound. No vessel of appreciable size could be

found, however, and Monsell's solution was applied. An opening was left for drainage and for the escape of sloughing particles. The bleeding never recurred and the wound healed nicely by granulation. She was discharged in three weeks.

The original disease was epulis of a malignant type. The propriety of removal in cases of epulis is forcibly impressed upon us, and this had been thoroughly done by Dr. McGraw, of Detroit.

These cases and one already reported in the *New York Medical Journal* of May 10, 1887, in which a large tumor and half of the lower jaw were excised, make six in all: three of the superior and three of the inferior maxilla. If an apology be wanted for their presentation on this occasion, reference might be made to the fact that Dr. Deadrick, of Tennessee, in 1810, was the first to remove a portion of the lower jaw for tumor.

Reports of operations of the kind enumerated do not seem to be common nowadays. Whether it be on account of their infrequency, or because they are deemed unimportant, I cannot say.

While an experience such as that indicated is not sufficiently broad to justify one in dogmatizing, I suspect that the larger proportion of these cases can be successfully handled without the preliminary delegation or tracheotomy; that the best way to do them is to get *through* with them as quickly as is compatible with thoroughness.

All the patients are free from recurrence to-day.

ATYPIC HERPES ZOSTER GANGRENOSA, WITH REPORT OF TWO CASES.

Read in the Section of Dermatology and Syphilology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY BENJ. MERRILL RICKETTS, PH.B., M.D.,
VISITING SURGEON FOR SKIN AND CANCEROUS DISEASES AND
PLASTIC SURGERY TO GERMAN PROTESTANT AND CHRIST'S
HOSPITAL, AND CONSULTING DERMATOLOGIST TO
THE WOMAN'S HOSPITAL AND MED. COLLEGE.

I am somewhat at a loss to know just how to bring the subject of "Zoster" before you, in the most profitable manner, unless it be to report two cases of that form so seldom met with, even by the specialist, viz.: Herpes Zoster Gangrenosum.

This is the most intense of all forms, being characterized by the usual primary eruption following the usual premonitory symptoms which in character are also very severe.

The vesicular contents remain clear for three or four hours, gradually becoming a light wine color, then a greenish black, soon changing to a greenish brown; these color changes occur around the base of the vesicles, the area of which remains a pigmented brown color for some months.

Necrotic changes occur before the vesicles break, and crusts form immediately after their rupture; the duration of the vesicles may be from three to eight days, and the time of cicatri-

zation is in proportion to the amount of sloughing that takes place. Kaposi says that if the suspected surface be touched early with nitrate of silver or iodine, the eruption will not appear, and that in every hæmorrhagic zoster the necrotic changes begin at the base of the affected spot.

Gangrene may appear in one or more vesicles, accompanied by pain and fever, the pain being of a neuralgic form and located throughout the distribution of any nerve, but oftener over that nerve with main branch nearest to seat of lesion.

The appearance of paresis or atrophy of muscles is not infrequent, nor is atrophy of hair or teeth infrequent, especially in the tissue diseased. Paralysis and atrophy occasionally occur when the eruption is situated in the territory of the trigeminus, or in upper nerves of the throat. Oculo-motor paralysis of zoster facialis and frontalis is sometimes met with.

As to the cause of this disease, there is much doubt, however in many cases it seems to have been in the intervertebrate ganglia, while in others it seems to be a neuritis or some peripheral disturbance. Thus far observers seem to feel that no treatment will retard or shorten the courses of this disease, hence it is a self-limited one.

Case 1.—Lena W., æt. 15, white, American, a nurse girl, brown eyes, dark brown hair, teeth good, height five feet two inches, weight 135, physique good, no glandular enlargement; menstruation regular; drinks beer, wine, coffee and tea; digestion good, bowels constipated, has considerable alopecia.

Small pimples appeared on the hands at 5 years of age, but they never gave any trouble whatever, and disappeared in a few days. At ten years the first characteristic eruption appeared on the chest the size of a three cent piece, and this gradually increased to six inches in diameter; two weeks later appeared in cheek, then on forehead; appetite at this time was poor, headache was severe, vomiting frequent.

Two months later a large patch, quite extensive, appeared on the inner side of the left leg, this was healed by means of simple remedies, and a similar patch appeared in the precise spot of the right leg.

Six weeks later an extensive eruption appeared upon each instep simultaneously; these increased to two and one-half inches in diameter, and in two weeks the inner surface of right knee and ankle was affected followed very soon by a similar condition of the corresponding position of left knee and ankle.

During the succeeding six months various eruptions, slight in character, reappeared over the spots previously healed, but the whole outer surface of the left leg became involved then; and four months later the affection was equally extensive and severe upon the right leg.

At 14 years of age she entered the Home of the Friendless in Cincinnati, she previously having lived out of the city and had come for treatment; her legs were still affected; sloughing had been extensive and was still present, and the integument entirely destroyed at that point.

Up to this time the body and arms had been entirely free, excepting the slight eruption on the chest at the very beginning four years previous. In last May she entered the German Protestant Hospital under my care; there had been a reappearance and entire healing of the affected parts of legs a number of times.

On the 10th of June there appeared three groups of vesicles upon the right side of the scalp, two upon the left side, and two on the scalp anteriorly, and five upon scalp posteriorly, all resulting in the destruction of the hair follicles affected; leaving white cicatrices from the size of a dime to that of a silver half-dollar.

On July 4, the back of both hands were affected to the extent of several inches, the left being the most extensive. On the following day there reappeared a patch four inches in diameter upon the inner left leg; this was healed entirely in two months.

July 10, there appeared large vesicles covering an area three inches in diameter on back of each forearm. August 3, she began to take kali iodidi grs. 60 each day, the dose being increased 20 grs. each succeeding day until 480 grs. were taken daily, this being reached August 26. She continued this amount until September 6, eleven days; then her mouth became sore and the amount was reduced to 250 grs., with the addition of $\frac{1}{3}$ gr. bichloride.

The eruption reappeared upon the forearms September 6, and on outer angle of right elbow.

October 20, reappeared on back of left hand, and at this time iodide and bichloride were discontinued. During November, December and January, patient did not have any reappearance of the eruption, except an occasional very small patch of vesicles here and there over the cicatrices and their immediate tissues.

February 10, 1890, there reappeared a patch five by three inches upon the outer surface of right leg.

In November, all medicine was stopped and an effort made to keep the bowels open thoroughly with saline cathartics and enemas. She complains most of the time of bones aching, of obstinate constipation all of the time, sleeps well, appetite fair, never has vomiting nor chills, pain more or less in eyes.

About March 18, 1890, there appeared a group of vesicles leaving an ulceration about three inches wide and six inches long, upon the outer surface of left leg which is very slow in healing. It has an offensive odor and looks worse than any I have seen owing, perhaps, to having ap-

peared upon the seat of an old lesion. The integument upon which the eruption appeared in this case would become gangrenous with a sharply defined border extending into the cellular tissue.

The time required for separation from healthy tissue varied from ten to fifteen days, an offensive odor being present from the time of the rupture of the vesicles. She has done better during the past seven months than any time since the first appearance of the disease. Up to November, 1889, she had taken mercury, arsenic, iodide potassium, iron, quinine, strychnine and belladonna, each having been given to its limit, without any appreciable effect or benefit; on the other hand the eruption would appear more frequently, more severe, and at the time of their full administration, so that with the two cases at hand, I cannot speak favorably upon any course of treatment.

However, I would suggest, and will in all succeeding cases, adopt a systematic course of curetting the diseased surface, as soon as the line of demarkation is established, that recovery may be hastened and offensiveness obviated.

Then, too, I would keep the bowels freely opened once or twice each day with warm water injections or saline cathartics.

Case 2.—Josephine M., æt. 14, German-American, a domestic, blue eyes and light hair, teeth fair, height 5 ft. and 3 in., weight 140, physique very good; no glandular enlargement, menstruation not yet established, but premonitory symptoms present, drinks beer, wine, coffee and tea; digestion good. Came to me with an irregular colored crust upon each cheek, about the size of a silver half-dollar; one upon the anterior surface of the middle third of each forearm, the size of a silver dollar, and another upon the anterior surface of middle third of each leg; all of these appeared forty-eight hours previous, within a few hours of each other. She stated that this was the third time that she had ever had any skin disease, and that the three attacks were similar in duration, location and character, and had all occurred within the past year. Pain of a burning character, tenderness in the affected parts, headache, tongue coated, constipation, hyperemia of conjunctiva, indicated the possibility of a previous fever, during the early stages of the disease.

I sent her to the German Protestant Hospital, where she improved very rapidly, and left for home at the end of a week, but was not entirely well as the gangrenous spots were not cicatrized yet. Nothing was heard of her until May 1, when she returned with another attack, upon the surfaces before attacked, with the exception of those upon the cheeks.

In each of the foregoing cases, the disease appeared long before the menstrual period; became very much worse just before, during and after the

first few menstruations, and were accompanied by hysteria, varying in degree with the severity of the disease. These are symptoms all of which Kaposi mentions as special features found in favor of the five cases in which he has made observations.

"The Trinidad," 137 Broadway.

THE OCULAR SYMPTOMS OF BRIGHT'S DISEASE.

*Read before the Kings County Medical Association, Brooklyn, N. Y.
November 8, 1889.*

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There are some diseases which always present profitable subjects for consideration; they never grow old, never uninteresting. In the light of ever varying and broadening experience, some old and familiar fact possesses a new and vital interest. Some facts, indeed, we have heard so constantly that we have grown deaf to them by their very repetition, till some emergency makes us eagerly strive to summon them from the shadowy realm of half-forgetfulness. It is, therefore, with less reluctance that I ask your attention to a subject upon which I can hope to say nothing new, nothing original.

"The Ocular Symptoms of Bright's Disease" is, it seems to me, a subject, the importance of which it is hard to overestimate. In the eye, as nowhere else in the body, a nerve, arteries and veins are exposed to our view, a lens even being kindly provided to assist us in our examination. Here it is sometimes possible to read, as in an open book, the signs of vital deterioration, as shown by the condition of the arterial system, long before any other symptom gives warning of the impending danger.

It is not an infrequent occurrence that the ophthalmoscopic examination discloses a condition of the eye ground, which tells of serious renal lesions, in patients who believed themselves to be in perfect health, and sometimes fortunately this discovery is of incalculable benefit to our patients, as it may enable us to avert, or at least delay the threatened calamity.

In no disease unless, perhaps, we except intracranial disorders, has the ophthalmoscope proved itself so valuable an aid to diagnosis as in Bright's disease. Before the discovery of the ophthalmoscope, the eye symptoms in this disease were of little value and were little observed. In Bright's book I find no mention of them, nor in Johnson's published in 1852. To-day, no author would think of treating this subject without special reference to the eye lesions, and as an example of the deserved prominence now given to these symptoms we may note that in Echhorst

"the manifest symptoms of chronic interstitial nephritis" are said "To refer chiefly to the condition of the urine, the circulatory apparatus and ocular changes."

Before beginning the consideration of our subject proper, a word may not be amiss as to our understanding of the term Bright's disease.

In medicine, where we can have no settled authority, and where every man is more or less a law unto himself, very annoying confusion is apt to arise from the fact, that a given name of a disease will not call to the mind of any two men exactly the same complexus of symptoms. This is especially apt to be the case with the term, Bright's disease, for since the appearance of Bright's book, diseases differing most widely in cause, symptoms and pathology have been classed under this general head.

It would be quite beyond the scope of this paper to propose or adopt any classification of Bright's disease, but I think it will suffice, to prevent any misunderstanding in the present instance to say that I do not use the term, Bright's disease as synonymous with albuminuria.

It may seem to you quite unnecessary to say that I include under Bright's disease cases where no albumen can be found in the urine, yet it has not infrequently happened to me, having made a diagnosis of this disorder from an examination of the fundus of the eye, to be told by the physician in charge of the case, that there must be some mistake as no albumen could be found.

It is quite true that as a general rule, retinal affections are a late symptom of renal disease and that albumen is usually found in the urine when such retinal troubles are present. Yet I shall endeavor to show that this is by no means an invariable rule, and that examination for glasses, for example may end in the discovery of morbus Brightii.

It has been claimed, I think by Gall and Sutton, that chronic Bright's disease is a disease of the arterial system primarily, and I find that it is now quite common to use this term and chronic endarthritis as synonymous.

Mahound recognizes three stages of the disease: First, the functional stage which is limited to the condition of high arterial pressure without organic changes in either the vascular system or the kidney. Second, chronic Bright's disease without nephritis the stage of organic changes in the vascular system. Third, chronic Bright's disease with nephritis the natural but by no means invariable termination of the disease.

The studies of DaCosta and Longstreth are of great interest in this connection. They find upon investigation changes in the renal nerve plexus and cardiac ganglia.

Our knowledge of the sympathetic system is at present so limited that we must accept with caution any theory founded on any but the firmest

* The Medical Reports.

basis of investigation; but to quote Dr. Meigs,² "from a purely theoretical point of view it is quite as reasonable to suppose that the morbid process might begin in the nervous system as in the lining of the arteries or elsewhere," and such an explanation would well account for some of the cases of optic neuritis met with in the disease.

The first symptom of Bright's disease which we will consider is uræmic amblyopia.

This disorder must not be confounded with visual disturbances depending upon retinal changes, for it is a condition characterized by sudden, partial or complete loss of sight with no corresponding ophthalmoscopic lesion.

Since the introduction of the ophthalmoscope, amblyopia and amaurosis occupy a much less prominent position in ophthalmic diagnosis than formerly, but in all forms of renal disease, amblyopia may occur, the condition which has been humorously described as when neither the patient nor the physician can see anything. The severity of this symptom may vary all the way from transient dimness, swimming and uncertainty of vision, to absolute blindness. Total blindness, of sudden onset and transient duration, is so rarely met with as to be but seldom mentioned.

Dr. Cocks³ has reported three cases, which seem of sufficient interest to justify a brief review.

The first case was that of a boy of twelve, who was seized with what was believed to be an epileptic convulsion. He was first seen by Dr. Cocks when just arousing from the stupor following the convulsion, which was uræmic, and then complained that he could not see. The following day, a careful ophthalmoscopic examination was made. The sight was entirely gone, he could not even perceive the light thrown in the eye by the mirror of the ophthalmoscope. The pupils were widely dilated, but on the closest examination not the slightest organic lesion of the retina, choroid or nerve could be discovered. This condition continued for about thirty-six hours when light perception was noticed, and finally sight was perfectly restored, and so remained for some time, while under observation.

The second case was of a woman aged forty-five, who was suddenly taken with intense headache, complete loss of sight and finally unconsciousness. The examination of the fundus oculi was negative. The urine showed an abundance of albumen. She completely recovered, and about a year later had a similar attack, from which she also made a good recovery. The duration of the amblyopic symptoms was about ten days.

Case three is of interest as showing the not common condition of retinal œdema. Mrs. C., aged twenty, developed uræmic convulsions dur-

ing her first pregnancy, at the seventh month, and was delivered while unconscious; the following day, when she partially aroused she was found to be nearly blind, being able only to distinguish the largest objects. An ophthalmoscopic examination revealed no lesion, save a slight œdema of the retina near the nerve. Three weeks later the sight was perfect.

Uræmic amblyopia is an affection of the nerve centers rather than of the eye proper. The poison which from a defective excretion has accumulated in the blood, overwhelms the nerve centers, and their function is temporarily suspended. Should the patient live till the poison can be eliminated, or till a tolerance can be established, the visual centers again resume their functions. The slight manifestations of this amblyopia, the dimness, the momentary loss of sight are most valuable danger signals, and by carefully watching for them in cases where we fear an attack of uræmic convulsion, we may be often forewarned, and it seems to me, that in all cases of pregnancy as well as in all cases of recognized kidney disease, the patient should be on the lookout for these visual disturbances, and the importance of at once summoning medical aid should they be discovered, fully explained. In this way much valuable time, moments upon which, perhaps, hang the life or death of the patient, could be saved.

The ocular symptoms occurring during pregnancy, in nephritis gravidarum, while not differing especially in appearance from those observed in other cases of nephritis, yet from the difference in cause and prognosis deserve a separate consideration. The difference is well pointed out by Weeks,⁴ who says, "In the study of albuminuric retinitis it becomes apparent that, in regard to their etiology two classes of retinal disease are included in the present acceptance of the term.

One depends entirely on the condition of the blood brought about by an acute disease of the kidney, the kidney symptoms preceding the changes in the retina, the other depending on a general (systemic) diseased condition of the arteries, capillaries, and to a less extent, the veins, in which the ocular changes and symptoms may, and not infrequently do precede the kidney symptoms. To the first belongs the retinitis of pregnancy, scarlet fever, diphtheria, etc., and all forms of acute nephritis. The first may be termed an irritative nephritis, due to the effect of a morbid element on the kidney tissue. The latter a strangulative nephritis, in which the blood supply is cut off by arterial stenosis."

Obstetricians are by no means agreed as to the manner in which pregnancy produces renal disease, but be it due either to increased intra-abdominal pressure, to the increased arterial ten-

² Medical Record, Aug. 24, 1884.

³ Medical News, March 24, 1888.

⁴ Archives of Oph., xvii, 3.

sion, to renal anæmia, the result of reflex vasomotor spasm, or to any of the causes suggested, the fact remains that in Bright's disease developed by the pregnant state, there is not the same widespread degeneration present which characterizes the chronic forms of the disease, and this fact, taken with the increased recuperative power which follows pregnancy, makes the prognosis much more favorable than under other conditions.

I have at present under observation a patient who informs me that six months ago, after confinement, her vision was reduced to light perception, she has to-day nearly perfect vision ($\frac{3}{80} +$ in both eyes) and can read the finest print with ease. The ophthalmoscope shows a healthy retina with a few white patches between the macula and nerve.

Another case recently observed, showing a surprising improvement in vision was a patient of Dr. Lindsay, of Huntingdon. This patient, Dr. Lindsay informs me, had an attack of acute Bright's, resulting in miscarriage in September, 1884. For about a month previous to this accident, eye symptoms were noticed, and for some eight weeks after, while confined to her bed, the patient was so blind as not to be able in full daylight to see anyone in the room, although they were but a few feet distant. For three or four months after her vision improved and has since then remained about the same. When I saw her last August her vision was $\frac{3}{80}$ in the right, $\frac{2}{100} +$ in the left, which with + 1.25 D. glass, can be brought up to $\frac{3}{80}$. The left eye deviates outward, and has done so since childhood, and was probably amblyopic before the attack. This visual result is quite surprising in view of the condition of the fundus. Both nerves are atrophic, the arteries are much reduced in size and marked retinal changes are present about the macula, and between the macula and disc in both eyes. Albumen and casts are not discoverable in the urine and the patient's general condition is fairly good.

The question of the induction of premature labor for the preservation of vision is one of interest alike to the ophthalmic surgeon and to the obstetrician. Dr. E. G. Loring was, I believe, the first to urge this procedure for the preservation of vision alone. In practice this problem is not likely to present itself, for the eye symptoms calling for active interference are usually but a part—an index, as it were, pointing to the threatened uræmic convulsion; but were they the sole danger, I can conceive of no condition more imperatively demanding our intervention.

Granting that the induction of premature labor is ever a justifiable procedure, a proposition which I think few will dispute, under what circumstances can it be more necessary, than for the preservation of vision?

The love of life is the most deeply rooted of human instincts, and when called upon to decide

in his own case, one might prefer even blindness to death; but in the case of another, where we can weigh the arguments more dispassionately, it seems to me that, except perhaps in rare instances, blindness is by far the more terrible affliction.

As the conclusion from a very interesting paper on the "Induction of Premature Labor, in Amaurosis and Amblyopia from Albuminuria in Pregnancy," Dr. Pooley says:

1. In all cases of pregnancy, not only should examinations of the urine be systematically made, but the eyes should be examined with the ophthalmoscope; since, in a large proportion of cases, where eye troubles exist, the patients make no complaint of disorders of vision. Frequently such troubles can be detected with the ophthalmoscope long before any disease of the kidney is shown in the urine.

2. In uræmic amaurosis, without changes in the eye visible to the ophthalmoscope, even should the usual accompanying symptoms, such as dizziness, nausea, and threatened convulsions, be absent, their superintention is soon to be anticipated, and the immediate induction of premature labor is indicated, without waiting until the life, as well as the sight of the patient is in danger.

3. In neuro-retinitis the induction of premature labor is not only justifiable, but urgently demanded. In some instances it is called for even in the earlier months of pregnancy.

4. It is required in cases of eye trouble recurring in successive pregnancies.

5. A woman having once suffered in this way during pregnancy, the relationship of cause and effect should be fully explained, both to herself and her husband.

As an interesting example in support of the foregoing conclusions, we may cite a case reported by Fryer,⁵ of a pregnant woman in whom a typical albuminuric retinitis, without hæmorrhage, was discovered in the sixth month. The urine was loaded with albumen, but no other symptoms of kidney lesion were present. Premature labor was advised, but deferred, and vision was reduced to mere perception of light. Premature labor was, however, finally induced, and health was restored, but complete blindness followed. The retina became normal in appearance, but the nerves were atrophic.

Dr. Loring, in a paper entitled "Premature Labor for the Prevention of Blindness,"⁶ cites two cases which show the disastrous results which may follow from allowing pregnancy to proceed to full term in presence of this complication. In both cases vision was permanently injured, and in one there was nearly complete blindness. "Looking," says Loring, "at the serious results which follow non-intervention on the one hand, and the favorable results which are known to have followed an early termination of pregnancy on the other, there are cases in which it is not only justifiable, but imperative to induce premature labor for the preservation of vision."

Detachment of the retina may occur as a consequence of a Bright's disease, and is probably

⁵ Kansas City Medical Index, July, 1888.

⁶ N. Y. Med. Journal, January 20, 1883.

due, when present, to a serous effusion between the retina and choroid. Wadsworth⁷ reports such a case in a pregnant woman at the eighth month. There was extensive detachment in both eyes, with choroidal changes. The retinae became re-attached and vision $\frac{1}{4}$ – $\frac{1}{8}$ followed the induction of premature labor.

Changes in the retinal vessels, unattended by nephritic retinitis, are observed in Bright's disease. It is in these cases that an ophthalmoscopic examination is of great value in arriving at a correct diagnosis. If a sclerosed condition of the retinal vessels can be seen, it is fair to infer that a like change is present in other organs, but the converse does not hold good, for in many cases of chronic endarteritis, the changes in the vessels are not sufficient to be visible by the ophthalmoscope. The ophthalmoscopic picture in this condition varies greatly. In some cases, the vessel walls are to be seen as fine white lines bounding the arteries, and again the opacity may be sufficient to entirely obscure the red blood column, and white bands replace the usual appearance of the blood currents.

Gowers mentions this condition as present in Bright's disease. Harlan⁸ cites a case presenting this condition treated in Wecker's clinic, and I remember to have seen, some time since, in the eye service of the Jefferson Hospital, a case where the retinal arteries were entirely sclerosed. If I remember correctly, in one eye no red arteries were visible, and the appearance of the white lines replacing the retinal arteries, sharply defined against the red ground of the fundus, was indeed striking, and reminded one of the branches of a tree as seen on a frosty morning.

Gowers emphasizes the importance of not confounding cases of arterial sclerosis with those cases of no pathological significance in which, "at a point where the vessels emerge from the disc, they are, the arteries especially, often surrounded by white tissue, sometimes like a cloud upon them, and from it prolongations may be traced along the chief vessels.

Aneurismal dilatation of the retinal vessels is also sometimes seen. I have at present an example of this rare condition complicating senile central choroiditis, in a gentleman, a private patient. At several places in the course of the larger retinal arteries, on or near the disc, dilatations are present, of about twice the size of the normal artery. I cannot detect any pulsation in these small aneurisms, even on pressure.

Neither albumen nor casts are present in this case, but the presence of these dilatations is of great interest as showing the possible presence of a like condition in the smaller arteries in other organs.

Two forms of aneurism are observed, according

to Gowers: First. Of some size in the primary branches of the central artery on the disc. Second. Miliary aneurisms of the arterial twigs in the retina and of the smaller capillary vessels.*

Retinal hæmorrhages, although by no means distinctive of Bright's disease, are sometimes met with. They differ in number and appearance in different cases. They are of most frequent occurrence in the posterior part of the eye, and vary in size from the smallest discoverable dot to several times the disc diameter. When occurring in the inner layer of the retina, they present a peculiar striated flame-shaped appearance; when in the more external portion they are more sharply defined in extent and round or irregular in shape. They are due, when present in this condition, to degeneration of the retinal vessels, general high arterial tension, from the firm support of the inelastic coats of the eye, having little effect in determining them.

None of the foregoing ocular changes are pathognomonic of Bright's disease; they may be found in other conditions as well, and may be absent in well-marked cases of kidney disease, but when found in connection with such symptoms as hypertrophy of the left ventricle, an incompressible radial artery, urine of high specific gravity with or without albumen and casts, then the diagnosis is certain beyond question.

Of the ocular symptoms of Bright's disease, nephritic retinitis, also called albuminuric retinitis, is the one most frequently observed. This affection is, as a rule, an attendant of chronic kidney disease, and is a late symptom.

As previously stated, we may for convenience divide the cases presenting retinal disease into two classes, the irritative and the strangulative nephritis. The latter class is the one by far the oftener observed and, as the points wherein the former class of cases differ from it have been already pointed out, while considering nephritis gravidarum, the following description of the retinal symptoms will apply to both.

It is difficult to say even approximately in what proportion of cases of Bright's disease retinal changes are present. It has been estimated by different observers as occurring in from 6 to 30 per cent. The frequency with which this symptom is observed, as well as the type of case presenting it, will depend largely on the class of patients examined. As seen in the wards of a general hospital, in an eye hospital or in private practice, nephritic disease will present widely differing aspects. In the first instance cases with much œdema and highly albuminous urine are most frequently observed; in the other classes the disease manifests its chief symptoms through the nervous system, and headache, dizziness, dyspeptic symptoms and frequent micturition are complained of, and the attention of the patient is not

⁷ Annual Med. Science, 1889.

⁸ Trans. Am. Oph. Soc., 1886.

* Medical Ophthalmoscopy.

especially called to the condition of the kidneys. It is in such cases that the ophthalmoscope frequently discovers the renal origin of the symptoms. It is not, however, safe to say that retinal lesions are present with much greater frequency in these cases presenting few annoying symptoms, than in those in which such distressing manifestations as dropsy and dyspnoea are observed, for in the latter the severity of the other symptoms makes the patient indifferent to the condition of the eyes, and no examination of the fundus is made.

I have seen it stated by an eminent ophthalmic surgeon that in a London hospital where all cases of Bright's disease were systematically examined, 60 per cent. showed eye symptoms, but I have not been able to verify the statement. I believe that such a careful and systematic examination of a large number of cases would show retinal disease to be a surprisingly frequent complication.

Why, in Bright's disease, the retina should be so frequently and seriously involved, has never been explained to our entire satisfaction. The explanation may lie partly in the highly specialized, delicate nature of the retina, and partly in the fact that a pathological condition of the retina is more appreciable to the patient, and more easily observed by the physician than similar changes in other nervous tissue.

As to the method of production of retinal lesions, some may be explained by the altered condition of the blood. Changes in the retina corresponding to those found in other nervous tissue by Gall and Sutton have been suggested (Gowers), but the explanation most frequently adopted is, that these lesions are due to the altered condition of the retinal vessels. Dr. Carl, by a very careful study of the subject, has demonstrated a degenerated condition of the vessels in all the tissues of the eye, more especially in the retina and choroid, and affecting all the coats of the arteries save the intima. Weeks also supports this view.

"There is," says Weeks, "little or no inflammatory action involved, there is but little infiltration of leucocytes and increase of nuclei, and very little hyperplasia of connective tissue, such as we would expect to find in so chronic a condition if a true inflammation were present. Extravascular the condition usually is simply one of the escape of the blood from the vessels."

Retinal complications are not confined strictly to any period of life or to either sex. As tabulated by Schlesinger¹⁰ the ages and sex varied as follows:

	Male.	Female.
From 1 to 10 years	1	—
" 10 " 20 "	3	8
" 20 " 30 "	5	3
" 30 " 40 "	7	2
" 50 " 70 "	12	1
Unknown	1	—
Total	29	14

being 67 per cent. males, 33 per cent. females, the majority of males being over 50, females at the age of sexual maturity. In the 103 cases presented by Bull¹¹ the age varied from 5 to 78 years and the sexes were about equally divided.

The degree to which vision is impaired ranges all the way from no noticeable loss of vision to almost complete blindness, and is sometimes surprisingly at variance with the ophthalmoscopic picture. In one of the most severe cases of neuro-retinitis I have ever seen, while I had carefully tested the vision shortly before the attack, I found V. = $\frac{2}{3}$ had been reduced but to $\frac{2}{3}$, which in a few days improved to $\frac{4}{5}$, with no corresponding improvement in the appearance of the fundus.

When the macula is damaged central vision may be lost, but this is not common. Hæmorrhages may, however, encircle the macula and cause an annular defect in the field (Gowers).

As to the symptoms observed, we may divide nephritic retinitis into two general types—the degenerative and the inflammatory.

The degenerative form is the most common, and the first changes noted are usually the appearance of small white spots in the retina, usually in the neighborhood of the macula. These white spots, caused by the degeneration of nerve fibres, are at first small and delicate, and are often arranged in a radiatory manner around the macula. As the disease progresses they may become larger and coalesce.

It may be well to observe here that care should be taken not to confound the early manifestations of nephritic retinitis with the small dots somewhat similar in appearance, but more yellow in color, which are sometimes seen in the eyes of old people and are probably due to some senile choroidal changes.

Hæmorrhages are present in the degenerative type with varying frequency. Sometimes none are observed, sometimes the smaller hæmorrhages are absorbed, leaving little or no trace, and fresh ones make their appearance. In some cases, the hæmorrhages are so conspicuous a feature of the disease as to lead to its designation as hæmorrhagic retinitis. Little or no disturbance of the nerve is noted in this type of the disease. Sometimes a slight blurring of its outline takes place, but no change presenting an inflammatory appearance.

In the inflammatory form, neuro-retinitis, the first change in the ophthalmoscopic appearance is probably an œdema of the retina—but this condition is rarely noted. When first seen, as a rule, the retina and nerve are hazy, the veins distended, and often so tortuous as to present a corkscrew appearance; the arteries are reduced in size. As the disease progresses the evidences of interference with the retinal circulation become

¹⁰ Oph. Review, iv, 334.

¹¹ Trans. Am. Oph. Soc., 1886.

more marked. The nerve is swelled and the disc outlines blurred, while masses of exudation are seen in the retina; these may increase in size till they encircle the nerve with a wall, as it were, of exudation. Numerous hæmorrhages are present, and in the region of the macula, in typical cases, white shining spots are seen, radiating from the macula as a centre. The general infiltration of the nerve and retina and this peculiar arrangement of the white patches at the macula, are said to be pathognomonic of Bright's disease. In some cases the nerve is more seriously involved, presenting a papillitis with the typical woolly disc. These cases are sometimes spoken of as the neuritic type of the disease. It is not to our purpose to enter now into detail in describing the well-known ophthalmic picture of nephritic retinitis. As seen in practice the disease will present a great variety of deviations from the typical, and widely varying combination of symptoms.

As a rule, nephritic retinitis is always present in both eyes, one eye may be attacked first, but we may confidently expect its appearance in the second eye. To this rule there are some well authenticated exceptions. In Bull's cases, in ten of the 103, only one eye was involved, but he lays no stress on this fact, expecting its subsequent appearance in the other eye. Eales¹² reports a case in which a typical retinitis was present in one eye, the other being healthy. Weeks, in his paper before cited, gives a similar case, and Yvert¹³ reports a most curious case in which unilateral albuminuric retinitis was shown post-mortem to exist with the absence of the kidney on the same side as the healthy eye. The case was one, according to Yvert, of typical nephritic retinitis with hæmorrhages and concentrically arranged degenerative changes about the macula. The kidney, renal vein, artery and nerve were absent on the right side, and on the left one kidney about double the normal size was found, which presented microscopically and macroscopically the lesions of parenchymatous nephritis.

Other cases are on record of this peculiar coincidence, for I can see no reason to consider it more than a coincidence.

In cases of retinal troubles in Bright's disease albumen is frequently found in the urine; it is also frequently absent. No doubt repeated and careful examinations would discover it in the majority of cases. Grand¹⁴ presents thirteen cases in which the retinitis preceded the appearance of albumen in the urine. Delande and Trousseau each report three similar cases.

Cardiac hypertrophy is a very frequent attendant of the retinal disease—in all but three of Bull's 103 cases, it was either present or developed while under observation.

Retinal symptoms being most frequently found

in cases of granular kidney as a late symptom, the prognosis as to life is necessarily bad.

Dr. Miley¹⁵ considers the presence of such retinal changes in Bright's disease to affect the prognosis very much for the worse, the mortality in hospital cases among the affected being at least doubled, not one having lived eighteen months after the changes were observed. In Bull's cases, from which all cases due to scarlatina and pregnancy were excluded, of the 103, eighty-six had died—fifty-seven in one year, eighteen in two, six in three, four in four, one in six. Of the fifty-seven dying during the first year, thirty died in the first six months, and of the sixty-seven cases living, fourteen were seen for the first time within six months. In view of this very unfavorable prognosis as to life, the prognosis as to vision is of less importance. Vision is rarely entirely lost, and often slight improvement in the condition of the eye is noticed.

As to treatment no general proposition can be laid down. Treatment directed to the patient's general condition is indicated, and the eye symptoms should be met as they arise.

RECENT EXPERIENCE IN THE TREATMENT OF EXOPHTHALMIC GOITRE.

Read at the Meeting of the New York State Medical Association, October 23, 1890.

BY E. D. FERGUSON, M.D.,

OF TROY, N. Y.; SECRETARY OF THE ASSOCIATION.

Exophthalmic goitre is not a common disease, and yet not so rare as to render it a curiosity. Doubtless the large majority of physicians have had more or less experience in its treatment. If that experience has corresponded with my own, it would have been marked until a recent time by eminently unsatisfactory results, at least in the majority of cases. It is true that occasionally cases would be met which did not make rapid progress downward—cases in which the disease would remain stationary, or even an improvement take place—but until about two years ago it had been the conviction of the writer that but little encouragement could be given the victims of this disease, while the idea of a cure could rarely be entertained. The variety of treatment suggested and the contradictory statements of those treating on its therapeutics justified the conclusion that either the medication was eminently unsatisfactory or a variety of morbid conditions requiring differing treatment had come to be classed as exophthalmic goitre, and the therapeutical as well as the nosological differentiation remained to be made.

Though the disease is one with sufficiently well-defined characteristics to allow of ready

¹² Oph. Review, vii, 63.

¹³ See Oph. Review, ii, 194.

¹⁴ Annual Med. Science, 1888.

¹⁵ Oph. Review, vii, 1863.

recognition, still errors of diagnosis may and doubtless do occur. The fact that enlargement of the thyroid body is not peculiar to this disease, and that a frequent pulse is attendant on a multitude of morbid conditions, furnishes us two-thirds of the diagnostic points as of common occurrence, and it is not unreasonable to suppose that occasionally prominence of the eyes may be added from causes not the same as the conditions determining the development of exophthalmic goitre. The conclusion that the condition is not at any rate a pathological unit has been strengthened, in the judgment of the writer, from the results of the use of digitalis, for in every instance in which he felt confident of the diagnosis, that drug not only failed to afford relief, but was apparently productive of injury. In this he found himself in accord with many to whose writings he has had access; and yet, occasionally, benefit or even a cure would be ascribed to digitalis.

Prior to 1888 his experience had been one of nearly uniform failure to relieve or benefit the patients suffering from this disease, at least so far as direct results from the agents prescribed could be fairly assumed; and this statement is made in connection with the fact that all therapeutical measures, including electricity, which had been recommended as useful, had been given thorough and persistent trial.

Being so thoroughly convinced of the inefficiency of our resources, it was with reluctance that the care of a pronounced case of the disease was undertaken in the autumn of 1887, and the husband of the patient was quite plainly given to understand that the result would probably be a failure to cure or even stay the progress of the malady.

The patient was a woman about 55 years of age, with notable exophthalmos, enlargement of the thyroid body, and a pulse from 110 to 120. She faithfully followed the treatment advised, which included tonics, aconite, belladonna, electricity in the form of the so-called central galvanization, digitalis, etc., but after several months she was so much worse as to be confined to her bed with a pulse rate of 120 to 150 and a discomfort in the cardiac region that prevented sufficient sleep, and at times seemed to reach the agony of an angina pectoris.

In deliberating on the course to be pursued in this case, it occurred to the writer that the rapid, forcible and occasionally tumultuous action of the heart, as well as the changes found in that organ in cases dead from the malady, would favor the idea of an increase in the resistance in the systemic arteries as one of the events of the disease, and as digitalis was believed to increase arterial tension it was concluded that that fact explained its failure to quiet the excited heart action.

The then new therapeutical agent, strophan-

thus, was said to lessen the resistance in the systemic circulation, and with that object in view its administration was begun. The patient at that time was in a pitiable condition. She was unable to walk; in fact, every change of position brought on exceedingly uncomfortable, generally quite painful, sensations in the pericardia, and emaciation had advanced to an extreme degree, thereby emphasizing the exophthalmos. A measure of relief was manifest soon after commencing the use of strophanthus, which was some three or four months after the case was taken in charge.

As soon as a positive degree of improvement in the rate and quality of the pulse and the general condition of the patient was manifest, all treatment aside from the administration of iron, arsenic and strophanthus was omitted, and the improvement continued, till in about six months the pulse was reduced to 80, the patient was in every way comfortable, and able to take a fair amount of exercise without inconvenience.

By one of those curious coincidences of the observation within a short interval of time of a number of rather rare cases of disease, it fell to the writer's lot to see within a few months eight cases of the disease under consideration, and thereby quite an amount of clinical material was placed at his disposal.

One of the early cases was seen in consultation, and was the first instance of the disease ever seen by the attending physician. The patient was a woman, 41 years of age, with a pulse rate of 150, and with the usual dyspnoea. She was at once put on the strophanthus treatment and the improvement was rapid. A few weeks after this case was seen, and as another curious coincidence, the same physician brought to my office another case in a man 41 years of age. In this case the pulse was 130 and the dyspnoea on exercise was troublesome, but not as extreme as in the preceding case. He was placed on the same treatment and improvement was prompt. He continued the medicine for about ten months, except a few days, when he took spartein, but returned to the strophanthus under my advice. I examined him recently and found him in good health and with a pulse rate of 76 per minute.

It is not necessary for me to give details of all the cases, it being sufficient to state that the administration of strophanthus afforded relief and allowed a return to ordinary occupations in every instance excepting one, and in that case there was associated pulmonary disease, probably of a tuberculous character, which implied an unfavorable termination aside from the exophthalmic goitre. In this instance there was no improvement in any of the symptoms, the case passed from my observation and doubtless progressed to a fatal issue, though I have been unable to trace the history. Several of the cases

are still under observation, and I consider them still under treatment, for though they have improved so as to consider themselves in some instances as cured, in my own judgment the treatment should be continued with more or less regularity for a longer period of time. I have also excluded from my report some cases recently seen, and in some cases seen only once and that failed to keep me advised of their progress.

In no instance has either the exophthalmos or the goitre been entirely removed, and so far as the goitre is concerned I should not expect its removal, for where the enlargement has existed for some time it becomes of so dense or fibrous a consistence as to exclude the idea of its complete removal. So far as I could judge, however, there was a notable degree of improvement both in the exophthalmos and in the enlargement of the thyroid body, but it is manifestly difficult or even impossible to express in mathematical terms the changes in these features of the disease as can be done in the rate of the pulse. In the case of the heart, however, and in particular in the instance of the patient first cited, I was satisfied that not only were the rate and rhythm of the contractions favorably influenced, but there undoubtedly existed a dilatation of the left ventricle, which improved so as to leave no physical or symptomatic evidence of cardiac lesion.

Though recent pathological considerations tend to place exophthalmic goitre in the category of the neuroses, and to find the locus of its origin in that specially vital region—that neuropathic switch-board—the vicinity of the floor of the fourth ventricle, still the evidence is not such as to give us any clew concerning its etiology or treatment aside from what we can gather from clinical observations, and consequently there is no explanation to offer as to the method by which strophanthus affords relief, aside from the idea that first suggested its use, and that was to relieve an apparently overtaxed heart through the lessening of the resistance in the systemic circulation, which was claimed to be its action. This explanation may not be in full harmony with the results of physiological experiments, and particularly with what is known as Marey's law, that there is an inverse ratio between the arterial or general blood pressure and the rate of the pulse, the heart apparently being hastened in its rapidity when resistance is diminished, as would be the case in an ordinary piece of machinery.

While accepting in a general way the conclusions from physiological experiments, there are some claims made relative to the dynamics of the vascular system that fail to gain my assent, or at least to stand as explanations, and the disease under consideration is an instance, for in it the action of the heart more nearly resembles that which attends and follows violent physical exercise than any other condition with which it

can be compared, and assuredly we will hardly concede that the rapid, violent and excited action of the heart in those who are climbing mountains is due to diminished arterial tone. Whether we are to consider arterial tone and systemic resistance as occasionally convertible terms is also a problem, though an intimate relationship is manifest. Incidentally it may be noted that the mystery and perplexity of some points in the physics of the circulation of the blood renders a climax in the claim made that blood-vessels may *actively dilate*, and thereby practically solve the problem of lifting oneself by the boot-straps.

If we grant the power of forcible dilation on the part of the blood-vessels, it is not difficult to understand that the range of change in vascular resistance from the tonic contraction of arteries to their active dilation, and consequent virtual suction effect, would be sufficient seriously to disturb the heart. A corresponding variation of resistance would be disastrous in a steam engine were it not for the "governor." But we are told the heart has such a "governor," and that it is located in the vicinity of that part of the medulla occupied by the restiform bodies. We will consent that physiological experiments seem to justify such a claim, though pathological observations have not so far contributed any positive evidence, and a careful sifting of the evidence will not justify positive conclusions—nothing more than the probability that in the medulla there is a centre having control over the circulation of the blood, and that strophanthus may in some way "govern" this.

Aside from any theoretical considerations as to the way in which the agent acts, the fact remains that benefit was apparently the direct result of its use, a benefit so notable as almost to justify the claim of a cure in some of the cases, but it would be wise to stop short of such a claim, for it was observed in one of the most favorable instances that while the result in a general way was eminently satisfactory, still any mental anxiety or disquietude was sufficient to raise the pulse rate from about 80 to over 100 for a period of several days.

The period of time during which the agent has been on trial is altogether too brief to justify too glowing claims for permanency of results, and the writer cannot divest himself of the fear that the improvement will not in the majority of cases remain permanently.

The only claim that is justifiable at present is that strophanthus has proved more notably beneficial in the treatment of exophthalmic goitre than any other drug or remedial measure.

A few words relative to the agent itself, or rather its preparations and dosage, may be useful. The only preparation used by the writer was the tincture, but it was observed that a notable difference existed in the taste of different specimens.

This difference related mainly to the bitterness, and upon investigation was found to be ascribed by some pharmacists to the length of time the drug was allowed to remain in the menstruum, and by others to the improper predominance of pods over the seeds in preparing the infusion. It was impossible to conclude just how the excessive bitterness was induced, but it was apparently due to an oil or oleo-resin which would render the tincture opaque on the addition of water. Several ounces of this oily material were shown to the writer by one pharmacist as having been separated in the process of manufacturing the tincture.

In some instances the presence of a large amount of this bitter principle seemed to be productive of disturbance of the stomach, which was avoided by using other samples with less bitterness, and on the other hand some instances were noted where the bitterness was not objectionable, though on the whole the impression remained that those specimens that were notably bitter did not act as favorably.

The administration was by the conventional method of three doses daily—one at each meal—the initial dose being from 8 to 10 drops, which was increased, if necessary to reduce the frequency of the pulse, to 15, 20, or even 25 drops, and in fact relief was not obtained in some cases until the large doses mentioned had been used. In no instance did unpleasant results appear to be due to the drug, aside from some nausea which was ascribed to the individual preparation used, and apparently due to an excess of the bitter principle.

There have been but few, and those brief, notices of the use of *strophanthus* in Graves, or Basedow's disease, and its use is not advised in any of the recent "year books" consulted by the writer. It had been used by him for over a year in the treatment of the disease under consideration before he saw any notice in medical literature of its prescription by others. Within a year he has seen in the medical journals a few notices of its use, and the reports have been quite uniformly favorable.

Whether its apparent utility will bear the test of time and larger experience is still problematic—at present it seems to be our most valuable therapeutic resource in exophthalmic goitre.

INFLUENZA IN DOGS.—MM. MEGNIN and VEIL-LON recently presented a note to the Société de Biologie, stating that of late a disease similar to influenza has raged in certain kennels. In a pack of 120, at Chantilly, the majority were attacked, and among coursing dogs, at Aveyron, and a fine pack of beagles, the disease was also prevalent. All the characteristics of human influenza were found in these dogs.

THE CLINIC.

SURGICAL CLINIC

Held at the Harlem Hospital, New York.

BY THOMAS H. MANLEY, M.D.,

OF NEW YORK.

[Reported for THE JOURNAL].

Dr. Manley opened his clinical lecture by stating that the whole of their time, on this occasion, would be occupied with their consideration, and technique, of procedures for the radical cure of hernia, in reducible and strangulated cases, and would specially call attention to the question of anæsthesia. He said he proposed to do two operations, one of which, would be performed on a young man who suffered with a reducible hernia, and the other on an elderly lady, for a strangulated hernia.

Commencing he said: I propose to first submit for operation this young man, while the nurses are preparing the female patient. He is thirty years old; was always in good health until five years ago, while pursuing his occupation of ship's carpenter, in Kinsale, Ireland, he fell a distance of about fifty feet. He was picked up in an unconscious condition, and was not able to resume his vocation for more than a month. When he started to work again he discovered that there was a small swelling in his right groin, and for the first time in his life, he was troubled from time to time with dizziness. He bought a truss which sufficed for a time to keep the hernia in position, but in turn it would slip down by it; he now purchased a stronger one, which in a short time he had to leave off, as its chafing pressure was more than he could endure, and continue with his work. In time, along with the advance in volume of the hernia, his back commenced to give him pain, and for a long while he was unable to continue steadily following his trade, and was practically invalidated. In examining the protruded part it was evident that the sac, the fascia-propria-abdominalis, etc., was very much thickened; and though the intestine and omentum, went readily upward into the abdomen, and this pouch through adhesions, formed through cellular inflammation excited by the truss, remained. The patient had a horror of taking an anæsthetic, and Dr. Manley said, that since Réclus, of Paris, had published his famous article on "Cocaine Anæsthesia;" a report of more than seven hundred consecutive operations, he had used it locally with very great satisfaction, and hence he proposed to do both of these herniotomies, for radical cure, and strangulation by cocaine anæsthesia, injecting and diffusing it after the method of Réclus. He said, he regarded this, as one of the greatest boons ever conferred on either the patient or surgeon, for, while it dispensed with the ne-

cessity of an assistant, an important matter in emergency cases in the country at night, or amongst the poor, the patient himself proved the most valuable assistant of all, rising, sitting, standing, changing or shifting his position, or even using his hands as the surgeon desired. About ten minims of a 4 per cent. solution of the subcutaneous-injection were administered and the operation begun.

The speaker said he proposed to be guided by the conditions which he encountered in doing the operation, his aim would be, however, to separate, and ligate off the sac, close the ring by partly detaching the inner pillars of it, for there was no real canal, in this case, and, clamping them together with tin plate, and shotted silver wire, leaving the metal *in situ*, till firm, solid union was complete. As the incision was carried down, it was at once seen, what is almost to be expected, to be met with, every time we do this operation. An ectopic testis was discovered which instead of having one spermatic cord, had really three, *i. e.* the artery was found coursing along the under surface of the sac, the vas deferens on one side, and an enormously varicose spermatic vein on the other. They all converged as the peritoneum was approached, and assumed some sort of normal anatomical arrangement. They were all intricately incorporated with the laminae of the peritoneal pouch, and required very delicate dissection. The cocaine anæsthetic acted admirably, and though the operation was extremely tedious, with very much tearing and lacerating of the parts, and occupying more than an hour, the analgesic-action of the alkaloid was perfect. The most rigorous antiseptic measures were observed throughout the operation.

When the female patient was brought in upon the stretcher for operation, Dr. Manley said that he wished it noted that her condition was very low, that she had had no movement from the bowels for nine days, that protracted and futile taxis had been made, before she was turned over to him for treatment; that she had fæcal vomiting; in fact, was in positive collapse. He said last year, one woman in a similar condition, under etherization, had died on the table, before the operation could be completed, and a man, at about the same time, never rallied well from the anæsthetic, and died within ten hours after the herniotomy for strangulation. After satisfying himself that the local anæsthesia was complete, he permitted the House Surgeon, Dr. James Guest to operate. The hernia was a direct inguinal; of the incarcerated variety; the operation itself was a McBurney, which the speaker said, he regarded as superior to all others, in every species of strangulated herniæ; as it afforded the operator an opportunity to see precisely what he was doing, he had the hæmorrhage under perfect control and perfect drainage of the foul secretion in the sac

was complete. This operation, as in the preceding, was most gratifying as regards the cocaine anæsthesia. The difference of the patient's condition after an operation with cocaine and ether was most marked and satisfactory.

The operator said that he wished to emphasize the enormous value of this alkaloid in those cases in which, from organic, local or constitutional diseased conditions a pulmonary anæsthetic was never administered without danger. As in the present two instances; in cases of nephritic, hepatic, pulmonary or cerebral diseases; in cases of stenosis of the air-passages, idiosyncracies, and other morbid states of the system; wherein, after operation, either death speedily supervenes, or the patient's general health is deranged, the volatile anæsthetic may be blamed justly, rather than shock, loss of blood, or inflammation.

MEDICAL PROGRESS.

REPORT OF AN EXPERIMENTAL INVESTIGATION OF THE ACTION OF CHLOROFORM AND ETHER.—At the annual meeting of the British Medical Association held at Birmingham, July, 1890, DR. JOHN A. WILLIAMS presented in the Section on Medicine, a report upon this subject, and closed his paper with an extended summary of conclusions as follows, as reported in the *Brit. Med. Journal*, Oct. 25.

1. During chloroform anæsthesia the blood pressure is lowered and the heart's action is weakened.

2. Dilatation of the heart occurs to an appreciable extent, even when chloroform is administered gently, mixed with abundance of air (under 4 per cent. of chloroform vapor in the air).

3. Dilatation may occur even before the conjunctival reflex is abolished.

4. The dilatation affects all parts of the heart more or less—the left side as well as the right. It is not due to changes in the pulmonary circuit.

5. The dilatation is not due to the accompanying fall of pressure, to the diminished resistance to the ventricular systole, or to the diminished blood supply through the coronary arteries. Dilatation does not result from a similar fall of pressure brought about by means other than chloroform, for example, arterial relaxation caused by section of vasomotor nerves. Dilatation under chloroform often occurs very quickly, before there is any fall of pressure. Moreover, when the dilatation has followed a fall of pressure it is not removed by artificially raising the pressure, for example, by compression of the abdominal aorta.

6. There is no distinct change in the rate of the heart's action when dilatation occurs. A sudden

NOTE.—Both patients made rapid and satisfactory recoveries.

and complete cessation of the cardiac rhythm is never caused by the inhalation of chloroform. Cardiac failure occurs by a more or less sudden enfeeblement and dilatation of the organ; not by a sudden complete cessation of rhythm.

7. The tone of the heart muscle is depressed, the cardiac walls become relaxed, and the functional efficiency of the organ is impaired.

8. When the heart becomes greatly dilated it fails to be an effective force in keeping up the circulation, while its rhythmic movement still continues—though so feebly as to be inefficient.

9. Cardiac failure sometimes occurs in this way a considerable time before the respiration stops, though generally the respiration stops before the heart has become incapacitated.

10. The failure of artificial respiration to bring about recovery (in some cases of chloroform collapse), when begun immediately after the spontaneous respiration has ceased, is in all probability due mainly to the enfeebled and distended state of the heart, which has become unable to maintain the circulation. Hence the supply of fresh air (by artificial respiration), free from chloroform, cannot be taken advantage of.

11. The depressing influence of chloroform on the heart—leading to dilatation of its cavities—is not exerted through the vagus nerves, but is a direct effect of the drug upon the cardiac mechanism. Section of both vagi does not obviate the weakening and dilating influence of chloroform upon the heart.

12. The weakening and dilatating effects of chloroform are sometimes manifested in tolerably equal degrees on both auricles and ventricles; but sometimes more readily upon the auricles, and at other times upon the ventricles.

13. A peculiar periodic depression of the ventricular action sometimes occurs during recovery from the primary effects of chloroform.

14. The contrast between the relation to the heart's action of chloroform and ether in anæsthetic doses is very marked. With chloroform, cardiac dilatation frequently occurs—and often, indeed, a very marked dilation—before the conjunctival reflex is abolished. With ether, the induction of anæsthesia with complete abolition of the conjunctival reflex has not been attended by any noteworthy dilatation: indeed, effects of a stimulating character have sometimes been observed, and the peculiar periodic ventricular depression sometimes following chloroform has been seen to be removed.

15. Under the influence of chloroform a temporary slowing of the heart's action sometimes occurs—from asphyxial conditions or from sensory stimulation during imperfect anæsthesia. This slowing is quite different in its nature and causation from the enfeebling and dilatating effect already mentioned. The slowing is not due to direct influence of chloroform on the heart, but is

indirectly brought about through vagus nerves. It does not appear to be dangerous in the healthy animal.

16. The occurrence of fibrillar contraction (delirium cordis) does not appear to be a primary mode of cardiac failure from the inhalation of chloroform in the healthy animal, though it may sometimes supervene when the heart has become distended and incapacitated by chloroform.

17. The fall of blood pressure under chloroform is in its earlier stages due mainly to the depressing effect of the anæsthetic on the vasomotor centre, preceded often by a slight stimulation; the later stages are associated with failure of the heart as well as of the vasomotor centre.

18. The relative occurrence of cardiac dilatation and vasomotor depression varies. Sometimes the heart begins to dilate early—before there is any fall of pressure; at other times a large fall of pressure may occur before cardiac dilatation becomes marked.

19. The lowering of the blood pressure is in a certain sense protective; it retards the access of more chloroform to the vital organs. But, on the other hand, the fall of pressure may become excessive and produce dangerous effects.

20. In certain circumstances, when chloroform is very suddenly taken in, a dangerous dose may be absorbed, and the heart may become seriously affected *before* the vasomotor centre has had time to be much depressed.

21. When a fall of carotid pressure has been brought about by the *gradual* inhalation of chloroform in the ordinary way, firm pressure applied to the abdomen causes a marked rise of pressure—very much more than can be obtained by inversion of the animal. And even when the fall of pressure is due to the *sudden* inhalation of an excess of chloroform, pressure on the abdomen commonly, but not in all cases, leads to a decided rise in the carotid pressure. The existence of cardiac failure may prevent the possibility of such a change.

22. Changes in the respiration exert a most important influence upon the effects of chloroform administration. An amount of chloroform which can be given with safety during easy breathing may speedily become dangerous during deep, rapid respiration.

23. Free dilution of chloroform with air—the restriction of the percentage of chloroform vapor to 4 or 4½ per cent.—gives no security against an overdose. A percentage that give safe anæsthesia during ordinary breathing may lead to fatal collapse if given during exaggerated respiration.

24. Changes in respiration may be excited by sensory stimulation (operative interference, too strong chloroform vapor, etc.) during imperfect anæsthesia. Rapid, gasping respiration occurring in such circumstances is usually accompanied by

a rise in the blood pressure, and, as there may be already a considerable amount of chloroform in the circulation, there occurs a combination of circumstances specially favorable for the speedy and sudden development of dangerous collapse.

ANTIPIRYN IN PNEUMONIA, CHOREA, AND RHEUMATISM.—S. H. DESSAU, M.D., in *Arch. of Ped.*, in discussing this subject, says that the only disease in which he has employed antipyrin as an antipyretic is pneumonia. In this he seldom resorts to it unless the temperature runs above 104° F. early in the attack, and there are symptoms of nervous irritation including a tendency to convulsive seizures. Besides the antipyretic effects, antipyrin allays the nervous disturbance when not given too freely. It should be given in 2½ to 5 grains, repeated every hour for four hours—once in 24 hours. He prefers to have it administered toward evening, to secure sleep, as the result of its sedative action. If sleep takes place before all the doses are given, the rest is withheld. He has had the most marked success with antipyrin in the treatment of chorea, and corroborates the evidence of Dr. H. C. Wood in regard to its value in this disease. He has used antipyrin in 7 cases of chorea, 2 being still under treatment. One was cured in 1 week, 2 in 3 weeks, 1 in 4 weeks, and 1, the most severe of all, in 6 weeks. One case had previously been treated for 2 months with arsenic, bromide of potash, iron and digitalis without improvement. The beneficial effects of antipyrin might be inferred on the grounds of the evidence of the close relationship of chorea and articular rheumatism. Antipyrin has already acquired firm recognition as a reliable remedy in the treatment of articular rheumatism. For the past two years he has depended entirely upon antipyrin in pertussis, and has seen no reason for changing his practice. There were 45 cases, two being complicated with catarrhal pneumonia. They all recovered in shorter periods, or the attacks lessened in number and severity, than cases under former plans of treatment. Urticaria, of the more persistent form, does better under antipyrin alone or in combination with rhubarb and soda, than any other treatment.

TREATMENT OF ENURESIS BY DILATING THE VESICAL SPHINCTER.—M. SAENGER (*Arch. f. Gyn.*, xxxviii, 2). The technique of the operation is as follows: After cleansing the meatus with cotton, a disinfected metal catheter, preferably a female one, is introduced five to seven centimetres in the bladder, so that its point is about at the ureteral orifices. The tip of the right index finger closes up the mouth of the catheter and holds it quietly in position. The index or middle finger of the other hand is laid upon the catheter at the meatus. This finger

then makes forcible pressure, at first downward, then alternately towards both sides. The pressure must be springy, elastic, and powerful, so that the meatus becomes widely open and some urine flows off alongside the catheter. By this pressure not only the sphincter vesicæ but the muscularis of the urethra becomes strongly stretched. In cases where it is possible to introduce a finger into the vagina, pressure can be made against the catheter. In very sensitive individuals a sound armed with cotton containing cocaine may be first introduced, or the cocaine may be injected directly. In small children a thin sound should be used instead of a catheter. The dilatation is altogether painless. From eight to twelve stretchings should be made in all three directions at a sitting. More than ten or twelve sittings are seldom necessary, at first done twice a day, then on alternate days. The patient is also instructed to gain control over the sphincter, to refrain from fluids as much as possible, and to keep the abdomen warm. The bowels should be regulated. The patient is also ordered to write down how often she urinates. S. thinks the root of the trouble consists in a weakness or paresis of the vesical sphincter, maybe also a certain tenuity of the muscular bundles. The centre for micturition must also be implicated, but negatively, as the irritation which causes the tight closure of the sphincter has but feeble effect upon the centre. In cases where abnormal width of the vesical neck and the whole urethra exists with urethral incontinence, this method is not applicable. Here the artificial narrowing of the urethra is indicated. The involuntary expulsion of urine by multiparous women frequently is due to abnormal width of the vesical neck and urinary channel, besides insufficiency of the sphincter. When not so very extensive, dilatation of the sphincter should be beneficial.—*Am. Jour. Obstetrics*.

EXAMINATION OF THE SPUTUM FOR TUBERCLE BACILLI.—DR. H. KÜHNE, of Wiesbaden (*Centralbl. für Bakt. und Parasitenk.*, vii Band, No. 10, August 29, 1890), after referring to the fallacies and difficulties with which the search for tubercle bacilli in sputum from phthisical patients is surrounded, describes a new method of staining the bacilli. When it is difficult to spread out the sputum on a cover-glass he uses a concentrated solution of borax, to which at least an equal quantity of sputum is added. The mixture is shaken up in a suitable glass or is worked up in a mortar, after which it is easily spread in a thin layer over the cover-glass. Nummular sputa from cavities may be broken down by a watery solution of carbonate of ammonia; this has the advantage that it is partially volatilized as soon as the cover-glass is heated, and what remains is broken up by the action of the acid. An equable layer on the

cover-glass being obtained, the albumen is coagulated by careful heating over a flame, after which the specimen is stained in Ziehl's fuchsin solution for five minutes, the color is completely removed with a 30 per cent. solution of nitric or sulphuric acid, and the specimens are washed in water and dried. In order to obtain a contrast stain, 2 or 3 drops of a concentrated solution of picric acid in aniline oil may be added to a watch glass containing pure aniline oil; a drop of this, placed on the slide before the cover-glass is lowered into position, gives a sufficient yellow contrast stain to cause the red tubercle bacilli to stand out very prominently. They may be examined with a magnifying power of $\times 60$ to $\times 100$, and where they are in great number, as is the rule in "cavernous" sputa, they appear under still weaker magnifying power as particles of red dust on a yellow ground. To make a permanent preparation, Kühne recommends that the aniline oil be driven off by means of his hand blower and that the specimen be mounted in Canada balsam. By this method the tubercle bacilli only are stained.—*Brit. Medical Journal*.

ON THE TREATMENT OF CYSTITIS IN WOMEN. BY THOMAS MORE MADDEN, M.D., F.R.C.S.—Of all the diseases which come before us in gynecological practice there is none more frequently met with, more distressing in its effects, or more intractable to the means generally relied on for its relief, than cystitis in women. I therefore desire to bring under the notice of the International Medical Congress a method of treatment which I have found, by clinical experience, to be generally successful in the rapid curative treatment of this condition. The measures most commonly employed in such cases are merely palliative, and may relieve, but *per se* can never cure well-established cystitis in women. Nor am I aware of any method by which that can be accomplished save by giving the bladder absolute physiological rest. For this purpose Dr. Emmet's operation, *i. e.*, the establishment of an artificial vesico-vaginal fistula, may be successfully employed in some instances, but the practical objections to it are so great and obvious that for several years past I have abandoned this procedure in favor of another which I have found more generally effectual, and quite free from the disadvantages of the operation referred to. The plan which I have now employed in a very large number of cases of cystitis in the gynecological wards of the Mater Misericordiae Hospital, Dublin, consists firstly in the full dilatation of the urethral canal with the instrument exhibited, so as to paralyze the contractility of the sphincter vesicae and canal, and thus produce a temporary incontinence of urine; and secondly, in the direct application through the same instrument of glycerine of carbolic acid to the diseased endo-vesical

mucous membrane. I may add that any pain thus caused may be prevented by the previous topical application of a solution of cocaine, and that the procedure seldom requires to be repeated more than once or twice at intervals of a week or ten days; and combined with the internal use of boric acid, rarely fails to effect a rapid cure in any ordinary case of female cystitis.

DIAGNOSIS OF STRICTURE OF THE RECTUM IN CHILDREN. (*Rev. Mens. des Mal. de l'Enf.*, February, 1890.)—The history of stricture of the rectum in children is of recent date. The condition is somewhat rare at this period of life, for children are not exposed to the many causes which produce it in adults. Also it is latent in its evolution, and the few functional symptoms which it provokes constitute a reason why, in congenital cases, it may remain undiscovered until puberty has been passed. An attack of rectitis may form the first intimation of its presence. Gosselin's definition of stricture of the rectum is a condition in which there is a diminution in the lumen of the organ caused by a transformation of the extensible tissue of its walls into inextensible tissue. This definition would not apply to all cases of stricture in children, for in some of them the valvular narrowing does not render the wall of the rectum inextensible, at least at the beginning. In all cases, as Trelat and Delens have said, there is a thickening or transformation of the walls of the rectum. Trolin mentions four causes apart from syphilis for this condition,—traumatism of whatever character, inflammation, habitual constipation, and the presence of foreign bodies. In all cases, according to Reynier, the extent of the thickening in children is slight, but in a case reported by the author it was extensive, the rectum being converted into a long fibrous cylinder. The practical point of the paper is that in view of the possible latency of this condition and the complications which are possible, one should know the condition of the rectum by examination even in very young children.—*Archives of Pediatrics*.

MALARIAL GERMS.—DR. F. NEELSEN, in the *Centralblatt für klinische Medizin*, quoting from the writings of Camillo Golgi, in the *Archivio per le scienze*, says that two distinct types of bacilli have been demonstrated as causing the tertian and quartan malarial fevers. Biologically, the tertian germ completes its development in two days and the quartan in three, and the amoeboid movements of the tertian type are much more marked than those of the quartan. Clinically, the destruction of the hæmoglobin in the red corpuscles is much more rapid in the tertian than in the quartan. Morphologically, the difference is to be seen in the first stages of development; the amoeba of the tertian has a more delicate

mass of protoplasm and a sharper contour than those of the quartan, while the pigment granule and bacillus of the quartan are larger and coarser. Finally, segmentation takes place in a less regular manner in the tertian than in the quartan organism.—*N. Y. Medical Journal*.

ARISTOL IN DISEASES OF WOMEN.—SWIECICKI and GAUDIN (*Amer. Journ. Med. Sciences*, October, 1890), speak favorably of aristol in diseases of women. Swiecicki reports twenty cases of endometritis and pelvic exudation in which he used the drug. The discharge diminished and the local pain was relieved. The aristol was introduced in the form of vaginal suppositories, or a 10 per cent. solution was employed for the saturation of vaginal plugs. Dr. Gaudin finds the compound most useful in cervical erosion and endometritis, where it acts most favorably. It is a powerful disinfectant and deodorizer in cervical cancer, and Dr. Gaudin states that it promotes rapid cicatrization. It may be applied to the cervix in the form of powder, in solution, or in suppositories. After the curette has been used, the uterine cavity may be packed with strips of gauze saturated with a 10 per cent. ethereal solution of aristol. When the pure drug is taken or administered hypodermically, no trace of iodine can be detected in the urine. Hence, unlike iodoform, there is no danger of toxic effects when aristol is applied to large raw surfaces; moreover, it has no unpleasant odor.—*Brit. Med. Journal*.

THE ELIMINATION OF POTASSIUM IODIDE.—At the thermal baths at Bagnières-de-Luchon, M. GEORGES DOUX had several times during the past year occasion to determine the amount of potassium iodide in the urine of a patient ordered to take eight grams of the salt daily. The analysis showed the eliminated quantity to be so large and constant that M. Doux considered that further investigation of the subject would be of interest on account of the wide limits assigned to the size of a dose in treatment with this remedy. He therefore conducted a series of experiments upon himself, taking two 3-gram doses of the iodide daily for twenty consecutive days, and determining the amount of iodide and urea present in the total quantity of urine passed every twenty-four hours. The salt could be detected in the urine thirteen minutes after ingestion of the first dose, and the daily elimination after the second day remained a nearly constant quantity, being about 90 per cent. of the dose taken, whilst no traces could be detected seventy-five hours after the last dose. At the same time, the normal amount of urea present in the urine was diminished by about one-fifth. The experiments were repeated on two occasions, at two months' interval, with the same results, but it was observed that the quantity of iodide eliminated did not ex-

ceed 60 per cent. if a little absinthe had been taken on the previous day. M. Doux further states that he was prevented from extending his field of research by the attacks of coryza, epiphora, and maxillary pains that accompanied the daily ingestion of doses varying from one to five grams of iodide, whereas no ill effects were observed to follow a dose of six grams, which might have been expected to increase the severity of the symptoms.

THE DRY TREATMENT OF CHANCROIDS.—It is generally conceded that if chancroid ulcers can be kept perfectly dry a great step has been taken towards their rapid healing. In this view, the following procedure has been used to some extent on the surgical divisions at Bellevue Hospital, New York: A small roll of absorbent cotton about $\frac{1}{4}$ in. in diameter and long enough to surround the penis just behind the corona, is put in that position after the prepuce has been well retracted. A rubber thread-band is slipped over this ring of cotton in order to hold it in its place. By this means the sulcus behind the glans is obliterated, which is especially liable to retain the secretions, and the prepuce is held back from contact with the ulcerated surfaces. The cotton absorbs the exudation from those surfaces almost as soon as formed. The dressing is light, is easily handled, and may be renewed as often as needed to keep the parts in a dry condition. In addition to chancroids, herpes preputialis and venereal warts have been found to heal rapidly under the use of this dressing; sometimes no other treatment has been found necessary for these local lesions.

ACETANILID AS A HYPNOTIC FOR CHILDREN.—Amongst the many hypnotics which at present are being so liberally supplied by the chemists to the medical profession, it is well not to lose sight of the value of acetanilid in certain groups of cases. Although the drug suggests more that its action is to hinder the development of febrile condition, or, when that condition exists, to lower the temperature, still in many cases in my practice it has proved a valuable hypnotic and analgesic.

Its value has been most evident in cases of broncho-pneumonia, croupous pneumonia, and bronchitis, and that more especially in cases where children have been the sufferers. The marked relief which has frequently followed its administration has in many cases been extremely gratifying. Cases of fretful insomnia of the young, possibly partially caused by pain, fever, or general *malaise*, have been speedily relieved by the drug, and from six to eight hours of refreshing sleep have been induced. After sleep the awakening was natural, there being no excitement or confusion of thought. There was

no period of excitement observed before the drug took effect. Along with the onset of sleep there was a fall of temperature, frequently a copious perspiration, at the same time the respiratory acts were slowed and the pulse-rate diminished. In no case have any evil effects been noticed, although the success of the drug induced its employment in a large number of cases.

The need of a safe hypnotic for children, such as antifebrin, will, I think, be readily appreciated, the number of cases where it is required being unfortunately very large. It is still further enhanced as a serviceable drug for children by the fact that it is comparatively tasteless, and also by the smallness of its dose; the dose being from two to five grains, depending of course on the age of the child. A useful way of prescribing it, I have found, is to place the powder on the dorsum of the tongue either alone or mixed with a little powdered sugar. It might also be given in the form of a mixture—the drug being insoluble in a watery menstruum—suspended by the aid of mucilage and sweetened by any of the various flavoring syrups. There is yet another important advantage in hospital and general practice over many recently introduced hypnotics, in the comparative cheapness of the drug.—*Brit. Med. Jour.*

GALVANO-CAUTERY IN PURULENT OPHTHALMIA.—DARIER reports excellent results (*Le Progrès Médical*) in the treatment of two patients in the clinic of Dr. Abadie. In both of these cases there was a deplorable condition, the lids were enormously swollen, with great inflammation and marked involvement of the corneæ. They had resisted all other forms of treatment, including nitrate of silver. Antiseptic douches, with the instillation of iodoform followed each cauterization.

UNNA'S TREATMENT OF ULCER OF THE LEG.—DR. HILLEBRAND, of Cologne, has obtained excellent results with Unna's treatment. This consists in thorough cleansing of the leg with soap and water and application in a thick layer of the following paste to the parts, excepting the site of the ulcer:

R. Zinci oxidi,
Gelatin puris, aa 10.00.
Glycerini,
Aqu. destillat, aa 40.00.

The ulcer is then sprinkled with iodoform, and covered with a layer of cotton and sublimate or iodoform gauze. Over this is applied tightly a doubled headed wet mull bandage, the ends crossing in front of the leg. The bandage should extend at least from the middle of the foot to the calf, and is supplemented by a second one similarly applied. The dressings are changed in from two to four or even eight days, according to the amount of discharge. The effect of this method

of treatment is to stretch the healthy skin over the ulcerated surface, the integument being prevented from retracting by the application of the paste. The free escape of cutaneous secretions is not prevented by the paste, as in the case of the adhesive plaster treatment. Hillebrand has obtained a complete cure in twenty-five cases where he employed this method. In all of them there was a rapid improvement in the local and general conditions, and the patients were able to work after application of the dressings. Equally good results were obtained in a case of chronic ulcer of the arm.—*Medicinische Monatsschrift.*

THE USES OF CODEINE.—The rush of new analgesics and hypnotics has almost completely overshadowed the long-known drug, codeine, and in this country, at least, its merits have been overlooked, and but little employment has been found for it. Dr. M. Loewenmeyer, in *Deutsch. Med. Wochenschr.*, gives a summary of the various conditions in which he has found it useful. The dose which he has used is from $\frac{1}{2}$ to $\frac{3}{4}$ of a grain; where the latter dose did not prove effectual, larger doses also generally failed. It was generally given in powder form, also in mixtures; latterly also in the form of suppositories. The results were favorable and highly satisfactory in the majority of cases of the following diseases: Painful conditions of the abdominal and pelvic organs (gastralgiæ, colics, visceral neuralgiæ), ulcer and carcinoma of the stomach, carcinomata of the liver, of the intestine, and of the peritoneum, and pain arising from disease in the genito-urinary system, for example, in ovarian pains (this latter differs from the observations made by Freund). Codeine rendered excellent service in diseases of the thoracic organs: phthisis, bronchial catarrhs, pleurisies, pneumonias, and cases of asthma. It also seemed to act favorably in diseases of the heart, as in conditions of stenosis. Loewenmeyer highly prizes the hypnotic powers of codeine, and there is no doubt that this property of the drug is very much underestimated. The hypnotic results were not so satisfactory in the different varieties of mental and nervous diseases.—*Weekly Medical Review.*

AMMONIUM ACETATE IN THE TREATMENT OF SCARLATINA.—VIDAL recommends large doses of ammonium acetate in the treatment of scarlatina, and believes that it will also be found useful in the treatment of other exanthemata. In three children suffering from scarlatina to whom he gave the drug in daily amounts of from 35 to 90 grains, the temperature rapidly fell and desquamation was established within four days. In the author's experience the earlier in the course of the disease that the ammonium acetate is given the better are the results.—*Wiener medicinische Presse*, October 5, 1890.

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SATURDAY, NOVEMBER 29, 1890.

QUINIA USELESS IN NON-MALARIAL DISEASES.

DR. JOAQUIN L. DUENAS, of Havana, has published in a medical journal of that city, the results of nine years' study of uses and futilities of quinia, in 3,961 patients. The greater number of his observations were within the city limits, and he declares it as his opinion, although contrary to what might be expected, that Havana is, for the most part, free from malarial infection, and that it is only in those parts of the town where the pavements are imperfect, and where there is much decomposing organic matter that true malarial fever is met with. He thus confirms the views of LAVERAN, ROUX, COLLIN and others to the effect that malaria is not an urban infection and that the country is its home; that large cities in their growth and sanitary development gradually crowd out the elements that foster paludal disorders. Dr. Duenas classified his patients into febrile 2,267, and non-febrile 1,694. Of the pyretic affections, seventy cases only were classed as malarial, and these were freely treated by quinia; 704 cases were infectious in character, inclusive of small-pox, scarlet-fever, yellow fever, measles, varicella miliary tuberculosis, septicæmia, erysipelas and typhoid fever. Of these the last two alone treated to any considerable extent with quinia. This use was dictated by the desire to reduce high fever and to administer a cardiac and vascular tonic. After a short experience with the drug in typhoid fever and septicæmic conditions the writer abandoned its use in regard to them. He did not long per-

sist in the employment of quinia in malarial disorders of the adynamic type; in the few cases of pernicious fever, in which quinia was used as the chief remedy, death was the invariable consequence, but whether the fatal issue was due to the disease or to the medicine, the writer could not determine. Remittent fever appeared to be benefited by quinia, but in those forms where the typhoid symptoms become prominent, and which are by many called typho-malarial fevers, the uselessness of the drug was manifest, not only for the reason that it appeared to reduce the systemic resistance, to predispose the patient to attacks of syncope, to favor the degeneration of the cardiac muscular fibre—a frequent mode of death—but also by its local action to protract the period of recovery by its irritation of the gastrointestinal mucous membrane. The drug was found to be useless in diphtheria, dysentery and all forms of septicæmia, especially those having their origin in the puerperal condition; in erysipelas and acute articular rheumatism the remedy was serviceable. In the fever of syphilis quinia was useless; this was also true in regard to the fever of dentition and in chlorotic and hysterical subjects. In regard to catarrhal affections, having more or less pyrexia, the drug was often harmful, such as laryngitis, bronchitis and acute broncho-pneumonia; in these affections, the use of quinia was never followed by any significant reduction of the temperature. The same results obtained in regard to the treatment of catarrhal disorders of the digestive organs, of the bladder and other pelvic organs. It was observed, as a probable result, in several cases that the drug was harmful in prolonging the febrile stage and the duration of the disease. In cases of broncho-pneumonia in infants, it even appeared to hasten death.

In all, Dr. Duenas treated not far from one thousand cases of non-malarial febrile disorders and diseases of the various mucous membranes, with the general verdict of useless or harmful. Quinia was found useful in certain congestive conditions in hæmorrhages, apyretic rheumatic attacks, neuralgia, migraine, asthma, pertussis, cardiac depression and in some other disorders which, although not depending on any known malarial agency, frequently assume the intermittent type. Of all these diseases, neuralgia was the most frequent, and it yielded most

happily to the influence of quinia; of 228 cases successfully treated by that drug only two were regarded by the writer as having been due to a distinct malarial poisoning.

KOCH'S WISDOM.

For three month's the world has waited with impatience for a revelation of the reported cure for tuberculosis. The announcement that the illustrious KOCH had discovered a cure for the disease whose cause he had revealed ten years ago, was welcomed with a confidence that would have been bestowed upon no other discoverer in the medical profession. And now the world is filled with amazement at the remarkable results which are reported to have followed the use of this remedy—amazement mingled with disappointment that the nature of the remedy has yet been withheld. The blessing of the public is like that of Saxe on the man who first invented sleep.

If the telegraphic translations of Koch's article in the last issue of the *Berliner Klinische Wochenschrift* are to be relied upon, the discoverer is satisfied with the results of his experiments, but deems it prudent to withhold for the present the nature of the remedy from all but a few of his most eminent associates. Those to whom he has revealed it are said to be filled with enthusiasm. PROF. NOTHNAGEL is quoted as saying, "we face one of the greatest intellectual achievements in the province of medicine for centuries past. Prof. Koch's discovery has a far wider scope than Jenner's and is, perhaps, the grandest feat in the history of our science. . . . The present moment is among the most sublime that humanity has known."

The lymph which possesses the remarkable property of destroying tuberculosis is described as a brownish, translucent liquid. It is administered hypodermatically through the skin of the back. The dose is from .01 cc. to .25 cc., rapidly increasing, except in cases of advanced pulmonary tuberculosis, when only .001 or .002 cc. are at first injected. Koch's experiments have been conducted upon healthy individuals, including himself, upon patients suffering from various forms of tuberculosis, bone, lymphatic, pulmonary and cutaneous, and upon lower animals. Its action on man is many times more pronounced than

that on animals. The effect of an injection in a healthy individual begins in three or four hours after it is made. The first symptoms are lassitude, muscular rigidity in the lower limbs, dyspnoea and cough. An hour later the individual has a severe chill, lasting about an hour, accompanied with nausea and sometimes vomiting. The temperature rises to 36.6° C. (103.25° F.) or higher. These symptoms for the most part continue twelve hours, then subside; but the lassitude frequently continues several days. In the tubercular subject the same symptoms are present, but are more intense. There is a chill, elevation of temperature reaching from 39° to 41° C. (103° to 105.8° F.), extreme prostration, and usually nausea and vomiting, sometimes a slight icterus or a macular eruption (resembling measles) on the chest and neck.

The local effect on lupus is even more interesting. Within a few hours after the injection, we are told, the sores become of a dark red color; as the fever increases a rapid necrosis of the lupus tissue occurs, the color deepening to a dark brown or black. After the acute manifestations subside, repair speedily occurs. Recovery has repeatedly followed a single injection. The reaction in cases of bone, lung and lymph-node tuberculosis is not so striking because not open to ocular examination, but it is apparently similar in character. Koch believes that the remedy is a cure for incipient tuberculosis of the lung, but has not yet established the fact of its being a permanent cure. In regard to advanced tuberculosis he fears that it will not be more than beneficial.

The action of the new remedy is said to be exerted not upon the bacilli, but upon living tubercular tissue. It causes rapid necrosis of all tubercular new-formations. Its action is final, and it has no power over dead tubercle. Hence the dose administered may be rapidly increased, its action diminishing with the destruction of the tissue.

The only admitted defect of the treatment is the possibility of living bacilli being retained in the necrotic mass to infect the system at some later time. Occasional repetitions of the injections are, however, believed to be a safeguard against such infection, or, at least, a cure in case it does occur.

There might be a question of the possibility of

septic infection arising from the production of so great an amount of necrotic tissue in the organism; but we are told that the discharge from the necrotic masses is not purulent in character. The expectoration from tubercular lungs becomes non-purulent.

In nothing is Prof. Koch's wisdom more clearly displayed than in his reservation of the nature of his remedy until further observations of its action have been made. He has thus, no doubt, prevented a repetition of the absurdities which followed the announcement of BROWN-SÉQUARD'S alleged discovery. Whatever of good there is in the remedy will thus surely be secured to humanity. Long live the illustrious Koch!

DISHEARTENED CHILDREN.

Do not crowd the children! The school duties should be measured out to them in proportion to their nervous vigor. It is manifest to every discriminating observer that there are causes at work, in city life especially, that will compel a further reduction in the duration of the school attendance and in the pressure on the highly evolved nervous organizations of the present day. The hours and pressure are already much less than was considered perfectly legitimate in your and our boyhood days. The penalties then liberally administered, "for the good of the rising generation," are not tolerated for a moment now. Correctional measures of discipline have now to be administered sparingly and judiciously; you must spare the rod sometimes, or you will spoil the child. Many parents of our acquaintance view with annoyance and chagrin the apparent incapacity of their offspring, in the fact that the latter cannot undertake as many branches of study as were in vogue when they themselves were children. The only comforting assurance that we can give them is that the times are changing, and are destined to change.

EDITORIAL NOTES.

REMOVAL OF THE PANCREAS FOR CANCER.—The *Press and Circular* states that a case of removal of the pancreas for cancer has been reported by Rugge, in an Italian medical journal, name not given. The case was that of a woman, aged 50, who came under treatment for gastric symptoms, loss of appetite, constipation, and pain ra-

diating from the epigastrium in all directions. On examination, there was found a tumor between the umbilicus and hypochondrium, hard, resistant and somewhat movable. The diagnosis was arrived at of a retro-peritoneal sarcoma. Laparotomy was performed and the removal of the tumor undertaken, a procedure that was by no means easy, owing to the numerous adhesions which had formed. The growth was found to be the pancreas, the seat of primary carcinoma. The patient made a rapid recovery.

OFFICERS ELECTED.—At the annual meeting of the Washington Obstetrical and Gynecological Society the following officers were elected for the ensuing term: W. W. Johnston, M.D., President; D. W. Prentiss, M.D., H. L. E. Johnson, M.D., Vice-Presidents; H. B. Deale, M.D., Recording Secretary; Geo. Byrd Harrison, M.D., Treasurer; and G. Wythe Cook, M.D., Corresponding Secretary.

THE KOCH METHOD.—The associated press reports, under date of November 17, referring to this method has the following report from Berlin: Professor Bergmann delivered a lecture last night at the Berlin Clinical Hospital on the thirty-nine cases treated by him according to the Koch method. The patients were suffering from various tubercular affections of the joints, bones, skins, glands, throat and mouth. One of them was suffering from a tumor of the larynx, and it was doubtful whether the affection was a tubercular or cancerous one. He was treated in the manner laid down by Professor Koch, and, as there was no constitutional reaction Professor Bergmann was led to express the opinion that the tumor was of cancerous formation. Professor Bergmann illustrated the value of the Koch method as an aid in diagnosis. Professor Koch's indisposition was the result of an injection of the curative lymph. It was only very slight, and has now passed off. Professor Bergmann also demonstrated the Koch cure last night before Dr. von Gossler, Prussian Minister of Ecclesiastical Affairs, Instruction and Municipal Affairs, and many noted physicians, including the celebrated Dr. Kerschensteiner, of Munich. A visitor to the consulting rooms of Dr. Cornet writes to the *Vossische Zeitung* as follows: "Imagine a dark corridor scarcely four and a half feet wide thronged with a motley assemblage of men and

women, and in a small adjacent ante-room thirty persons coughing in a close atmosphere anxiously awaiting their turn for examination and treatment. One patient who appeared to be in an advanced stage of the disease had to be carried into the consulting room. In this room there were three assistants at work by a little table; one patient seated in a chair undressed and undergoing examination and three other patients partially undressed and awaiting their turn. Dr. Cornet in the meantime made his way through the throng calming the impatient, and seeing that every one took his or her proper place. A workingman who seemed to be suffering greatly pleaded that he was the father of four children and asked that his case might be taken without delay. He was told that he would be admitted as soon as a vacancy occurred. Similar answers were given to others who were importunate. The stream of applications for treatment has grown into a perfect avalanche." The writer in conclusion says that the municipal authorities ought immediately to erect temporary hospitals for the treatment of patients with tuberculosis.

THE ORTON PRIZE.—Dr. J. G. Orton, as President of the New York State Medical Association, has offered a prize of \$100 for the best short popular essay on some subject connected with practical sanitation, under the following conditions:

1. Competition to be open to all.
2. Essays to be forwarded to the Secretary of the Association, Dr. E. D. Ferguson, Troy, N. Y., not later than August 1, 1891, accompanied by the name of the author under separate seal.
3. Examination and award to be made by a committee appointed by the Council of the Association.
4. The successful essay to be read at the next annual meeting of the Association, and, if approved by the Council, to be offered for publication in the secular press, and issued in tract form or otherwise for general circulation.
5. Authors of essays, unsuccessful as far as the prize is concerned, but found worthy of special commendation, to receive intimation as to a proper disposition to be made of them.

DEATH OF DR. G. MONOD.—The death of this surgeon, well known in Paris from twenty-five to thirty years ago, is announced at the ripe age of eighty-seven. Dr. Monod was for many years on

the surgical staff of several Paris hospitals in succession, and had also served his seven years as assistant professor at the Paris Faculty. He was an able surgeon of a school now fast dying out, and enjoyed a large practice, especially amongst the Huguenot or French Protestant body, of which he was a prominent member. He was the father of Dr. Charles Monod, surgeon to the hospital of St. Antoine.

UNIVERSITY OF PENNSYLVANIA.—The compulsory course for the medical degree in this University has been lengthened to four years.

THE SUCCESSOR OF PROF. BARTHOLOW.—So far as we know the one to succeed Dr. Bartholow in Jefferson College has not been named. If, as in former times, the custom shall prevail to invite to that institution at every third vacancy a Western man, we think the West is now to be represented. If so, as yet, no one has been so prominently named as Dr. Samuel O. L. Potter, of San Francisco. His work has already rendered his name familiar, especially to medical students, and the college would gain an added strength if, in naming him to that position, it should also honor one of its alumni.

KOCH'S EARLY DAYS.—Mr. Arnold Koch, President of the Redheffer and Koch Art Company, of St. Louis, a younger brother of Dr. Robert Koch, of Berlin, says that "Robert is the third of thirteen children, the first nine of whom were boys. While the rest of us went fishing and hunting, Robert devoted his hours to study and observation. One of his favorite pastimes was the microscopical study of lichens and mosses. At 17 he had completed his course in the High School at Clansthal, Hanover, but was unable to enter the University of Göttingen until he was 18. At the University he wrote a prize essay in his second year. His course as a physician at Posen, where he first began the study of bacteria, his service during the Franco-Prussian war, and his investigation of the cholera germ, are all matters of record."

HYGIENIC INSTRUCTION IN SCHOOLS.—The French Minister of Instruction has directed that twelve lectures on Hygiene are to be given to the more advanced pupils in all *Lycees*.

DR. W. L. SCHENCK has removed from Osage City to Topeka, Kan.

TOPICS OF THE WEEK.

A STUDY OF DR. KOCH'S DISCOVERIES.

The result of Prof. Koch's discoveries, so far as we are able to understand them on this side of the Atlantic, promises to revolutionize the practice of medicine, at least in the treatment of diseases depending upon the presence of a microorganism. Notwithstanding that these investigations have been going on for some time, no one outside of his immediate associates seem to have any very definite ideas as to the method pursued in the preparation of the medicaments used. From the report which he has just published, nothing can be learned as to his secret, and for the present all liquids for inoculation will have to be obtained from Berlin. While this may be useful as a precautionary measure, and may serve to prevent the illegitimate uses which followed the announcement of Bergeon's gas, and Brown Séquard's fluid, it is not at all to the liking of many scientific men in this country. Still, we are scarcely warranted in entering a complaint against the discoverer, because the establishment of the correct principles upon which the cures depend is more to be desired than the immediate and wholesale practice which would follow the exact announcement of the methods.

So far as we can judge from the reports, the results in the practice of quite a number of physicians in Berlin would lead us to believe that a specific has been found which will arrest the progress of consumption, and that for all practical purposes those submitting to this treatment, even in advanced stages of the disease, may expect to be relieved from the immediate consequences of the affection. Whether it will be a guard against an attack at some future time the promoters are not prepared to say; but from our knowledge of the etiology, and the relations which the bacilli bear to it, there is no assurance that it will enact the role of vaccination as practiced for the prevention of small-pox. The remedy merely presents to the affected tissues a poison, probably in the shape of a ferment, which has a fatal effect upon the bacilli; the result of this action is that the diseased structures undergo a retrograde metamorphosis, necrosis takes place, and that portion which is not eliminated by expectoration is rapidly absorbed and thrown off through the usual channels. Where the disease affects joints, for instance, massage is recommended for the purpose of assisting nature in getting these objectionable products into the blood-current.

In the treatment of lupus and lupoid ulcerations the action of the remedy may be observed from day to day, and in this disease the descriptions are exceedingly interesting, and will be useful in enabling us to estimate the peculiar powers which it possesses. No physician can study the account published by Prof. Koch without a feeling of wonder and admiration, owing to the clearness of the evidence, the multiplicity of facts adduced, together with the well-known scientific character of the work previously performed by this celebrated *savant*.

It would be idle to speculate upon the character of Prof. Koch's medicament, but it will not be out of place

to call attention to some investigations which have preceded his, and which appear to throw some light upon this occult subject. In the *British Medical Journal* for last October, Mr. E. H. Hankin gave an account of the methods he had pursued for the purpose of rendering mice insusceptible to anthrax, by means of the subcutaneous use of an albumose obtained from cultures of the anthrax bacillus. Dr. Sidney Martin communicated an account of his researches in the same line on May 22, 1889, to the Royal Society. He succeeded in obtaining two albumoses, an alkaloid leucin, tyrosin and a peptone from cultures of this bacillus. These albumoses were strongly alkaline, and upon this condition, Dr. Martin assumed, their toxicity depended. When introduced into the living tissues, the toxic property of the albumose was similar to that of the alkaloid, only less rapid in its action. The symptoms correspond in the main with the effects which are said to attend the injection of Koch's liquid. The alkaloid used in this manner quickly produces death in mice, another factor going to show the close resemblance between the poison of Martin and the liquid medicament of Koch, which is used in what might be termed infinitesimal doses. Whether his inoculation liquid is prepared in like manner from the bacillus tuberculosis, remains to be seen. And if this assumption be correct, it is but a question of time when all disease dependent upon a germ for its progress will become amenable to similar treatment. This statement, however, does not indicate that I am committed to the belief in theory of the bacillus tuberculosis being the first cause of tubercular phthisis, as will appear from the study of other investigations referred to later on in this paper.

Mr. Rankin also reported to the Royal Society last year, that he had been able to obtain from cells that are, or can become phagocytes, a substance which is fatal to bacteria, thus confirming the doctrine of phagocytosis. In May of this year the *British Medical Journal*, commenting upon these discoveries, said: "It is obvious that this discovery throws a new light on Metschnikoff's phagocyte theory, and points to the *rationale* of pus-formation. Apparently we are dealing with a natural antiseptic—a substance produced by the organism to protect itself against microbes, and the question arises whether its administration can have an effect in modifying the course of the disease." The indications are that Prof. Koch has demonstrated the applicability of this principle in the treatment of tuberculosis, just as Martin and Hankin have shown its efficiency in arresting the progress of anthrax in mice. The weapons of the disease are the poisonous proteids, and nature meets them with weapons of a like character. The resistance of the organism is an inherent property, one of the normal functions of life; when this function has become impaired, or is temporarily suppressed, the disease-poison gains the upper hand, and if the condition is maintained for a sufficient length of time, the foundations of health are undermined, but never before have we had such a practical demonstration as in the case of the arrest of tuberculosis.

The investigations of Roussy (*Experimental Researches*

on the Pathology of Fever, Acad. de Med., February 12 and March 12, 1889,) seem to shed some light upon a subject intimately related to this line of study. In the course of his experiments Roussy found that certain diastases penetrating the blood became pyretogenous. By the injection of invertin into the blood, he produced in animals violent attacks of fever. Now, we know that the intestinal juice possesses the power of inverting cane-sugar; saccharose is transformed into invert sugar, and it is not unreasonable to assume that frequently occult febrile conditions may be due solely to intestinal derangements which permit or favor the absorption of invertin. The regulation of the diet in health, therefore, becomes a matter of paramount importance, and with attention to diet, and a knowledge of the principles underlying Koch's discovery, we are apparently on the threshold of a new era in the practice of Medicine.—Dr. John Aulde, *Medical Summary*.

THE STRUCTURE OF BACTERIA.

To give an account of the structure of bodies so small as those that belong to the bacteria would seem to exceed the powers of the best microscopist armed with lenses of the deepest focus, yet it has been essayed by Bütschli, the accomplished Professor of Zoology in Heidelberg. He has taken as the subjects of his examinations two large and well-known forms, which were recognized by Ehrenberg, and belong to the peculiar group of sulphur bacteria—one of these was named "*Monas Okenii*" by Ehrenberg, "*Beggiatoa*" by Zopf, and "*Chromatium*" by Perty—the *Ophidomonas jenensis*. These bacteria grow only in soil water impregnated with hydrogen sulphide; without that gas they dwindle and die, with it they have an active and vigorous life, and grow and multiply. They possess the remarkable power of decomposing sodium sulphate and fixing the sulphur. In their interior may be seen a variable number of dark, highly refracting granules or droplets, the accumulation of which sometimes renders the animal quite opaque. These granules are composed of soft sulphur, which dissolves readily in alcohol and reappears on evaporation of the alcohol. The droplets disappear in the course of twenty-four hours when digested in artificial gastric juice or in a 10 per cent. solution of soda. The *Chromatium Okenii* contains a red coloring matter, named by Prof. Ray Lankester "*Bacterio-purpurin*." Its form when seen on the side resembles that of a bean, but on transverse section is circular. The maximum length is 0.14 mm. The majority move rapidly forwards or backwards by means of a whip-like cilium. Each organism is provided with a thick, firm, colorless investing membrane, presenting net-like markings on the surface, which seems to be continuous with the flagellum. This membrane does not give the reactions either of cellulose with iodine or of albumen with Millon's reagent, but it stains well with hæmatoxylin and other staining agents. On pressure being carefully applied, the outer tunic bursts, and the body of the animal flows out in a manner that shows it to be of soft consistence, with an external reddish layer which is retiform, and an internal colorless one which contains all the sulphur granules. The addition of alco-

hol quickly dissolves out the red coloring matter, but leaves the plasma green; Bütschli therefore admits the presence of a red and a green coloring matter. The former is deposited in red rhombic laminae on evaporation of the alcohol. When the crystals are treated with diluted sulphuric acid they become blue; when with diluted nitric acid, grass-green. The central mass of the organism stains more deeply with coloring agents than the cortical, and, like the cortical, shows a kind of retiform or felt-like arrangement. The sulphur droplets are connected with the web, and not with the enclosed plasma, and are situated at the points of intersection of the web. Bütschli finds a very similar structure to that above described in spermatozoa. He recommends that the light, under which they are examined, should not be too strong.—*Lancet*.

SOME OBSTACLES TO MARRIAGE.

The leading statisticians of France are still much occupied with facts and figures concerning depopulation and its remedies. About 74 out of every 100 illegitimate children die in France before the age of 21. As one means of increasing marriage and adding to the population, it has been proposed to legalize and encourage the marriage of priests. M. Lagneau gravely reminds the Academie de Médecine that in the fifth century Sidonius Apollinaris, though a husband and father, was Bishop of Clermont-Ferrand, but, he added, "Now this would not be tolerated." Dowries are much more universally expected and guarded for marriageable daughters in France than elsewhere. This seems to interfere with the survival of the fittest. The suppression of dowries, it is suggested, would have the advantage of giving the preference over rich girls to handsome and strong young women, capable of producing beautiful and vigorous children. There is, too, it seems, too great a number of administrative and official posts, and this brings the rural population into great cities such as Paris, where they have fewer children and weaker. In Paris, the centre of administration, 11.6 per cent. of the residents are living alone, while in France in general there are only 4.25. Even these are not able to pay for bringing up their families. Scholarships and special payments by the State for this purpose cost, in 1887, £125,000. The want of provision for medical relief to the poor in the provinces also drives them into the great cities. Last year "nuptiality" and "natality" again fell off by some thousands as compared with the previous year, the marriage rate being only 7.1 per 1,000 and the birth rate 23.04 per 1,000; so that the demographic conditions are far from being satisfactory.—*Brit. Med. Jour.*

STATUE TO LIEBIG.

At Giessen there was on July 23 unveiled, in the presence of a large assemblage, a monument to this distinguished chemist. The statue is greater than life size, and allegoric figures representing Science and Culture are on two sides of the monument, which is of white marble and is described as a magnificent work of art.—*Pharm. Record*.

PRACTICAL NOTES.

KERATIN.

Drs. Unna and Beiersdorff recommend that pills coated with keratin, or capsules made of this substance, should be employed when drugs are prescribed which irritate the gastric mucous membrane, and the administration of which is liable to induce vomiting—such as preparations of digitalis and squills, salicylic acid, or iodide of iron; also when substances are given which neutralize the acidity of the stomach, or which in any way impair its activity—such as acetate of lead, tannin, nitrate of silver, alkalis, etc. An outer coating of keratin is also desirable when prescribing drugs that are required to act on the intestinal mucous membrane without affecting that of the stomach, such as extract of logwood, tannin, or the salts of aluminium. Finally, keratin is most valuable when substances are given with the object of destroying worms, but which if introduced in the ordinary way into the stomach undergo absorption to such an extent that they are liable to set up alarming symptoms, while at the same time their germicidal action is reduced. Keratin is obtained by treating shavings of buffalo horn with ether, alcohol, and an acid. Its special property is that it is insoluble in the contents of the stomach, but readily so in those of the intestine after the pancreatic juice has entered.—*The Lancet*.

INDICATIONS FOR THE USE OF GLYCERIN INJECTIONS AND SUPPOSITORIES.

The observation of the effects of glycerin injections and suppositories in a large number of patients has led Dr. Polubinski (*Deutsche Medicinal-Zeitung*, June 19, 1890) to the following conclusions:

There is no doubt that glycerin irritates the mucous membrane of the rectum. This is shown both subjectively in the burning produced by it, and objectively by the ascending of the mercurial column of the thermometer, if pushed deep enough within the intestine.

The increase of temperature and the desire to defecate are of but short duration, and the latter may often be overcome voluntarily by the patient. The irritation of the mucous membrane produces no local secretion, since the fæces, evacuated as a consequence of injections of glycerin, are only covered with glycerin. The author obtained the best results when the rectum and sigmoid flexure are filled with scybala. If fæces collect in the upper parts of the intestinal tract, glycerin is then inefficacious. According to the author, therefore, the cases in which glycerin enemata and suppositories are indicated are,—*first*, when the fecal masses are already in the rectum; *second*,

when they are in the parts of the large intestine immediately above, as occurs so often in lying-in women; *third*, in diseases of physiological conditions which produce mechanical pressure on the rectum or sigmoid flexure, such, for example, as new formations in the pelvis, pregnancy, etc.; *fourth*, in scrofulous children; *fifth*, in persons who, although they may daily succeed in having evacuations of the bowels, yet in whom the act of defecation is only accomplished with difficulty and accompanied by pain, and in whom in general the fæces are of excessive density.—*Thera. Gazette*.

ARISTOL IN OZÆNA.

Iodide of thymol—or aristol, as it is called—is strongly recommended by Dr. Löwenstein, of Elberfeld, in ozæna. He gives in the *Internationale Klinische Rundschau* several cases in which this remedy proved more efficacious than any other. In one case, the patient, who had previously been treated with iodoform, would have been discharged from his employment on account of the smell of the drug; aristol was then employed with the most satisfactory results, the fetor vanishing, the ulcerations healing, and the scabby crusts ceasing to form. Dr. Löwenstein makes use of insufflations, which answer very well, as aristol is a fine powder. He also paints ulcerated spots with a mixture of 1 part of aristol in 10 parts of flexile collodion. It is necessary to keep aristol in a dark-glass bottle, as it is easily acted on by light. It may be remarked that it has a very slight but not unpleasant odor, and that it is remarkably cheap.—*The Lancet*.

GLYCERINE CLYSTERS IN INFANTILE DIARRHŒA.

Two-drachm glycerine clysters have been found of great value in infantile diarrhœa. They act promptly, and do not cause discomfort.

TREATMENT OF CARBUNCLE.

Dr. J. L. Napier, of Blenheim, S. C., uses pure carbolic acid locally in the treatment of carbuncles. He paints the whole carbuncular mass with pure carbolic acid three times a day, until the mass begins to lessen and the slough is detached. If the carbuncle is seen before suppuration has begun, in three or four days it will abort. If suppuration has started, in seven to ten days the whole carbuncular mass can be removed with the forceps, leaving a healthy, granulating ulcer. The treatment, as above described, reduces the time of treatment from weeks to days; and besides that, the acid being a local anæsthetic, adds very much to the comfort of the patient by relieving the pain,—so much so that, after the first application, very little anodyne is needed.—*North Carolina Medical Journal*.

SOCIETY PROCEEDINGS.

Southern Surgical and Gynecological Association.

Third Annual Meeting, held in Atlanta, Ga., November 11, 12 and 13, 1890.

FIRST DAY—MORNING SESSION.

The Association convened in Concordia Hall, and was called to order by the President, Dr. George J. Engelmann, of St. Louis, Mo., at 9:30 A.M.

MAYOR GLENN delivered an *Address of Welcome*, the response to which was made by Dr. R. B. Maury, of Memphis, Tenn.

Dr. R. B. MAURY, of Memphis, then contributed a paper entitled:

HOW SHALL WE TREAT OUR CASES OF PELVIC INFLAMMATION?

The paper gave a comprehensive *résumé* of the pathology of chronic pelvic inflammation as it has been clearly demonstrated by Bernutz, by Polk, Coe and others, and by the results of abdominal section. This pathology is that of pelvic peritonitis dependent upon tubal disease—not cellulitis. The author declared the term chronic cellulitis a misnomer—a pathological condition which existed only in the imagination of the physician, a term which had been productive of pernicious results in practice and which should no longer be used in connection with non-obstetric pelvic inflammation.

When the pathology rests upon such abundant and positive evidence, the question might be asked, Why reopen a discussion upon it now? Because it is evident from our society proceedings and hospital reports, that great confusion exists in the medical mind to-day in regard to it. Dr. Byrnes' case, discussed in the New York Obstetrical Society during the present year, was taken as an illustration. In speaking of such cases the great tendency to relapses in chronic pelvic inflammation was illustrated by two cases in which pus tubes were found five and seven years after attacks of peritonitis, and when it was supposed the patients were entirely restored to health. Upon the subject of treatment, the writer admitted that by non-surgical therapeutic measures large intra-peritoneal exudations are often absorbed, and even some tubal and ovarian inflammations entirely disappear and recovery seems complete. But this is the exception and by no means the rule. For the radical cure of chronic pelvic inflammation non-surgical treatment fails in a majority of the cases. A great many women suffering to a moderate degree, continue to do so in spite of the best directed non-surgical measures, and perhaps wisely elect not to undergo operation.

As a rule, the only radical and permanent relief

is afforded by removal of the diseased appendages. The treatment of pus collections of course requires abdominal section.

Dr. JOSEPH PRICE, of Philadelphia, followed with a paper on

THE MOTIVE AND METHOD OF PELVIC SURGERY, in which he said pelvic surgery must be considered apart from abdominal surgery. It is distinct from it, both in the nature of the lesions dealt with, in the difficulties it presents, and in the complications and embarrassments to routine technique.

Nowhere as much as in pelvic surgery does the distinction between the general surgeon and the specialist in pelvic disease stand out so clearly. Pelvic adhesions in appendicitis, for instance, Mr. Treves would deal with by the knife. If this is feasible, why not put the knife to ovarian and tubal abscesses, to all intestinal fixation by inflammatory processes and the like? The very suggestion of such method to the mind of the specialist accustomed to deal with all the complexities of pelvic surgery is fraught with evil, and this mere suggestion only makes it clear that general surgeons, in so far as they are entirely wedded to the knife in removing disease, fall short of the demonstrated harmfulness of its application in pelvic work.

Relative to electricity, Dr. Price said that electricians yet talked learnedly of the undetermined place of electricity in the treatment of ovarian cysts, but tar water and tractors have gone to their long rest. The time must yet come when the claims made for electricity as an universal panacea must be exploded, and its real, limited, and narrow horizon of usefulness be well defined. The pernicious effects of so-called cures of reported complicated cases, adhesions, inflammations and the like, by men without training, who look only at the ampèremeter while they adjust a clay pad or introduce a galvanic sound, is not to be overestimated. He had repeatedly shown, by exhibited specimens, the fallacy of the claim of exact diagnosis made by these men, and the arguments are irrefutable. He believed that the only position assumed by the electricians that has the slightest foundation in fact, is that electricity will sometimes control hæmorrhage and relieve pain. That it cures either is not proven.

In dealing with adhesions, the first point to be sought after is to find a crease or crevice, into which some progress can be made. In separating intestinal adhesions, they should be broken as far from the bowel as possible. The farther away the less liable they will be to bleed, and the absence of hæmorrhage is a great comfort in these cases. The strings of adhesions may be dealt with according to their size, it sometimes being best to remove them, at others there is no necessity for this. In doubtful cases their removal is

the better surgery. All bowel adhesions should be carefully examined after their separation. By so doing, faecal fistulae will often be avoided by the careful placing of an intestinal suture. It hence is apparent that no pelvic surgery should be attempted until the operator is competent to deal with intestinal wounds even to resection and anastomosis. Once the adherent mass is removed the ligature should be applied close up to the cornu uteri. The ligature should not be so heavy as to resist knotting nor so light as to break easily. The ordinary surgical knot is the safest of all knots with which to tie the pedicle. It constricts more evenly and certainly, and will slip less readily. The leaving of sufficient button is of the greatest importance to prevent slipping of the ligature.

In the treatment of extra-uterine pregnancy his urgent advice is, to operate without delay when the symptoms point to the disease, with the assurance that delay will only complicate matters and sacrifice the life of the mother.

The field of pelvic surgery, said Dr. Price, is not one of experiment or palliation; that it strives in all cases to remove the offending body in order to conserve the rest of the economy; that its tenets are founded on philosophy and fact, not fiction; and that its worth lies in its proven results. The surgery that plucks out the eye or casts aside the limb, to save the eye or the limb or the life, is greater, better and wiser, than a sentiment that preserves a shell to inclose a ruin.

FIRST DAY—AFTERNOON SESSION.

DR. W. H. H. COBB, of Goldsboro, N. C., read a paper on

SUPRA-PUBIC CYSTOTOMY IN A CASE OF ENLARGED PROSTATE.

The patient, a farmer, married, aged 49 years, rheumatic diathesis, dated his troubles back to 1881; while attending to the duties of Register of Deeds, he carelessly allowed over-distension of his bladder, and had suffered more or less since that time. In 1882 he had an attack of nephritic colic and passed a small calculus, similar in size and shape to a grain of wheat. On three different occasions he passed dark, gritty deposits. In 1883 he suffered much inconvenience and some pains in urinating. In 1887 he passed a dark, gristly, bloody substance about the size of a corn pea, accompanied by much pain and bloody urine. For the past three years he has suffered much with cystitis in a very aggravated form, with great pain and difficulty in defecation, urine containing much blood, pus and mucus. The patient's efforts to relieve his bladder and bowels were tormenting, and night after night was spent walking over his premises with groanings so severe as to disturb his neighbors. The patient consulted Dr. Cobb June 15th last, and from the

history of the case he suspected vesical calculus, but failed on examination with sound to detect any stone. A digital examination, however, per rectum, disclosed the right lobe of prostate greatly enlarged, rough, indurated, exceedingly tender and sensitive. After consultation by letter with Hunter McGuire, he decided upon supra-pubic cystotomy as the only hope of permanent relief, which was done after the method of Dr. McGuire on June 23. At the expiration of two months (August 23) he found the prostate perfectly normal with no symptoms of cystitis and withdrew the plug, allowing the fistula to unite, which it did in about ten days. His patient performs the act of urination and defecation without the slightest trouble, and expressed himself as entirely relieved, and is at present following his usual vocation.

INFLAMMATION IN AND ABOUT THE HEAD OF THE COLON.

DR. MCMURTRY, of Louisville, read a paper on this subject. He said the teachings to be found in systematic treatises on surgery and practical medicine, upon inflammation and its results in and about the *caput coli*, are not only worthless, but positively misleading. This is true not only as to pathology and treatment, but even as to the anatomy and relations of the cæcum and its appendix.

It is well known that inflammatory changes in the vermiform appendix are in almost every case the origin and seat of the inflammatory diseases about the *caput coli*. Inflammation of the cæcum is very rare, yet the testimony of surgeons and pathologists is abundant that in a certain proportion of cases cæcitis, with perforation, occurs without involvement of the appendix. Regnier, in 1886, operated in a case presenting symptoms of intestinal obstruction with peritonitis, doing an abdominal section. At the autopsy cæcitis with perforation was discovered. In 1888, the speaker operated in a case of perforative cæcitis and sutured two perforations in the cæcum. His patient recovered and was present in the Surgical Section of the American Medical Association in May of that year.

Faecal impaction has been mentioned by surgical writers as a cause of inflammation about the head of the colon. Pain over the cæcum, with a faecal mass perceptible on pressure often occurs, but rarely, if ever, associated with peritonitis. A few weeks since Dr. McMurtry saw a case in conjunction with Dr. H. H. Grant, of Louisville, in which a localized peritonitis existed in the right iliac fossa, with a well defined firm tumor. Abdominal section was done, and instead of appendicitis, they found the disease to be cancer of the *caput coli*. Irrigation and drainage rescued the patient from the immediate danger begotten by active peritonitis. The patient was a woman

of middle age, and the engrafted peritonitis presented the symptoms of an acute condition. Malignant disease of the cæcum has not, so far as the writer is aware, been mentioned by writers upon this subject as a probable condition in the diagnosis of deep-seated inflammations of the right iliac fossa.

The decision to operate should be determined more by the grade of the inflammation than by the time it has existed. When a diagnosis has been made, and three days have elapsed without subsidence of pulse and temperature, operation should be done.

Dr. McMurtry submitted the following conclusions:

1. Inflammation about the *caput coli* is, as a rule, inflammation of the appendix.
2. A certain proportion of cases will recover spontaneously by resolution. With these recurrence of the disease is common.
3. In the larger proportion the disease will endanger life, and may at any moment assume a condition practically hopeless.
4. Early operative interference involves less danger than delay, and should be resorted to in all cases in which a high grade of inflammation is persistent.
5. The essentials of the operative technique are brief anaesthesia, quick and thorough work, removal of the appendix, irrigation and drainage. The lateral incision is preferable to the median.

FIRST DAY—EVENING SESSION.

PRESIDENT ENGELMANN delivered an address entitled

THE CAUSES OF ILL HEALTH IN AMERICAN GIRLS, AND THE IMPORTANCE OF FEMALE HYGIENE.

He showed that the health of the American girl is threatened and impaired by causes more or less avoidable, as they are due to the methods of life, our methods of training and education; that the physique of this girl, most favorably situated amid auspicious possibilities, is imperfect; her brain over-worked, her nerve power exhausted, her function impaired, and reproduction endangered, all by reason of the susceptibility of her peculiar organization, and the increased impressionability of the sensitive system during the years of development, in which it is subjected to the most severe strain.

The remedy is attention to woman's peculiar organization and the cyclical waves of her dominant function; or, in other words, harmonious development and occupation of nerve and muscle; diminished brain work and nerve stimulation with increased and coördinate physical exercise; increased protection and diminished compression of dress; self-knowledge and individual care during periods of heightened susceptibility. Changes are necessary in custom and fashion, in

methods of labor and education. A harmonious co-education of mind and body should be approximated with coincident maintenance of proper hygienic condition.

Dr. Engelmann closed with a plea for the self-care of the American girl and her proper physiological instruction by the mother, which, alone will mitigate or remove the initial cause of many of her ailments. Upon the mother he would impress that the perfect development of the female function, and the maintenance of this function, once developed, in a healthy condition, is essential to the perfect health of the girl and the perfect health of the woman; that self-care, a well-regulated female hygiene, is the foundation of her well being.

SECOND DAY—MORNING SESSION.

DR. C. A. L. REED, of Cincinnati, Ohio, read a paper entitled

INDICATIONS FOR OPERATION IN ECTOPIC GESTATION.

The paper starts out with the assumption that the only proper treatment of ectopic gestation is by laparotomy, or, more properly, coeliotomy. While the profession has become practically unanimous that this is the proper line of treatment, the indications for operation have been less definitely decided upon. This conviction is forced upon the observer, not only by a study of the literature of the subject, but by encountering cases which have been advised against operation by their attending physician, until hæmorrhage within the pelvis has threatened a fatality which is but too frequently realized. The most legitimate excuse for this dilatory practice, is to be found in the confusion which has arisen with regard to the supposed uniform causal relationship of ruptured ectopic gestation to pelvic hæmatocele, and the division of the latter into "primary" and "secondary" rupture. These terms are unfortunate, and, as used in this connection, may be entirely arbitrary. Primary rupture is made to mean rupture beneath the peritoneum, instead of *first* rupture as the etymology of the word would imply, while *secondary* rupture is made to mean rupture within the peritoneum, instead of "second" rupture. Whereas, an intra-peritoneal rupture may be, and frequently is a primary rupture, when spoken of with reference to the sequence of events in ectopic gestation. There would be no serious confusion even here if we were not also taught to leave extra-peritoneal hæmatocèles alone to be taken care of by absorption, and if we did not add that as these hæmatocèles are generally caused by ruptured ectopic gestation sacs, we are to relegate these cases also to the expectant plan of treatment. This conclusion is without warrant, and is responsible for hundreds of deaths annually from this one cause.

The treatment of ectopic gestation premises the diagnosis of this condition. This is obviously difficult, and in the majority of instances cannot be arrived at at all, or, if at all, only presumptively; but in all these cases conditions can be found in the pelvis, which if not conclusively of extra-uterine pregnancy, yet constitute conclusive indications for exploratory operation. The presumption of ectopic pregnancy can be arrived at before rupture, chiefly by a history of previous sterility, by a previous amenorrhœa, followed after a few weeks by irregular hæmorrhage, by increased tumefaction to either side or back of the uterus, and by the existence of false decidua within the uterus. The latter fact may be safely determined by the judicious use of the Emmet curette forceps. The diagnosis after rupture is essentially the diagnosis of internal hæmorrhage. Time wasted either to determine the cause of that hæmorrhage, or to find out if it be primary or secondary, is criminal. The thing to do is to cut down and operate. The position has been taken that time should be taken for the patient to rally from the shock. One of Dr. Reed's own cases died simply because he waited twelve hours for reaction—a lesson which taught him the fallacy of the old teaching, and which has since saved lives at his hands. The best way to overcome shock from internal hæmorrhage is to stimulate the patient by giving ether, stop the drain by ligating the bleeding vessels, and rouse the nervous system by washing out the belly with hot water.

Dr. Reed's conclusions are:

1. The only proper treatment of ectopic gestation is that by abdominal section.
2. The operation should be done in cases before rupture so soon as the condition can be presumptively diagnosed.
3. The operation should be done in cases after rupture so soon as the evidences of internal hæmorrhage become apparent.
4. In cases in which the viability has already been reached without rupture, pregnancy should be allowed to advance to term before operation, but only under the closest possible vigilance.
5. In all cases the appendages from both sides should be removed providing the condition of the patient will justify the extension of the operation.

Dr. BEDFORD BROWN, of Alexandria, Virginia, followed with a paper entitled

THE LOCAL AND GENERAL TREATMENT OF GANGRENOUS WOUNDS AND DISEASES.

Many years ago, previous to the late war, Dr. Brown determined to institute a series of experiments to ascertain the capability of local and general treatment of all gangrenous wounds and diseases that came under his care, either for their prevention or arrest. The object was to find local agents possessing active properties as stimu-

lants of vital action in the affected parts, also as means of disinfecting and deodorizing gangrenous sloughs, hastening their final separation and for the establishment of a healthy basis for granulation. In cases coming under his care he found that the deodorizer failed to accomplish these objects. He then employed a solution (almost saturated) of sulphate of zinc and dilute sulphuric acid as a local application, which seemed to meet all the requirements. The first case in which it was applied was according to the following formula:

R. Zinci sulphatis, ʒj.
Aquæ, Oj.
Acidî sulph. dil. ʒss. ℥.

After the free application of hot water at 110° the solution was applied every three hours on bats of raw cotton. In the course of two days the sloughs separated rapidly, leaving a perfectly clean, healthy basis for granulation. This solution evidently possesses active antiseptic properties. It is an admirable deodorizer; it is clean and cleanses the parts effectually.

In cases of great loss of sensation in the parts, weak circulation, reduction of vital action, and depressed vitality, he knows of no agents better calculated to arouse nervous action and stagnant circulation, for as soon as the living basement is exposed it gives rise to intolerable pain. He has used this solution in all forms of gangrenous wounds and diseases, some limited, others extensive, and associated with septicæmia, with benefit.

Dr. Brown cited the history of several cases of different varieties of gangrenous wounds and diseases treated by various methods.

Dr. HENRY F. CAMPBELL, of Augusta, Georgia, made some impromptu remarks on *Vesico-Vaginal Fistulæ*.

Dr. W. L. ROBINSON, of Danville, Va., read a paper on

THE TREATMENT OF GENERAL SEPTIC PERITONITIS,

in which he called attention to those cases which tended, by absence of pain and a seemingly improved condition after chill and fever, to mislead as to the necessity of operating, and instanced two cases of recent date seen in consultation in which septic peritonitis and secondary abscess existed in spite of the seemingly favorable condition of the patient. He says that often there is an utter disproportion between the pathological condition and the amount of pain and tenderness,—a condition so often seen in puerperal peritonitis.

He states that traumatic abdominal injuries, appendicitis and pelvic inflammations, are the chief causes of septic peritonitis, while of course any internal or external influence which produces suppuration may be the indirect cause.

He agrees with Dr. G. Frank Lydston, of Chicago, that in children, falls, blows, etc., are the causes generally of peritonitis, and that because

of the age of children in directing attention to the seat of injury we often diagnose the disease too late. Dr. Robinson takes the stand that gonorrhoea is a frequent cause of septic peritonitis and the reason why it did not always produce it was, that it did not invariably invade the uterus, and even when it entered the tubes, the adhesions to the ovary rendered it self-limiting. He holds that section, irrigation and drainage is the treatment, and that where adhesions are extensive that salines should follow the operation in order that the peristaltic action of the bowel would prevent re-formation. Cases occur which, when seen by the surgeon, are too prostrated to undergo a complete operation, and the proper plan is to rapidly do what one can by section, irrigation and drainage. Dr. Robinson instanced a case of recent date in which the patient was saved when seen only *in extremis*. He urges the surgeon to go prepared to resect, anastomose, etc., as complications may indicate. Where conditions are diagnosed which will most likely terminate in septic peritonitis, such as recurring appendicitis, that preventive measures should be undertaken; and where great tympanites exists he would adopt Dr. Davis' mode of opening the bowel and flushing it out with hot water.

DR. JOHN D. S. DAVIS, of Birmingham, Ala., contributed a paper entitled *The Clinical History of the Episcystic Surgical Fistula, with Cases*.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Official Report on the Execution of Kemmler—New York County Medical Association—Academy of Medicine—Sig. Giovanni Succi—Miscellaneous Notes.

Dr. Carlos F. MacDonald, Chairman of the State Commission in Lunacy, who was at the head of the corps of medical witnesses present at the execution of Kemmler by electricity in August last, has only recently made his official report of that event to the Governor. Some of the newspapers, by the way, have objected to the publication of this report, on the ground that it is itself a violation of the new law, which expressly forbids that any accounts of executions conducted under its provisions shall be published. After giving the particulars of the execution and describing the post-mortem examination of Kemmler's body, Dr. MacDonald, in his report, goes on to say:

"Notwithstanding the wide publication of the execution of Kemmler, and the efforts which have been made to proclaim it a failure, and to invest

it with an air of repulsion, brutality and horror, it is confidently believed that, when all the facts in the case are rightly understood, the first execution by electricity will be regarded as a successful experiment, and that in time due credit will be accorded to those whose duty required them to act as principals in carrying out the law, the establishment of which is destined, in the not distant future, to be regarded as a step in the direction of a higher civilization. As might have been expected at the first execution by this method, there were certain defects of a minor character in the arrangement and operation of the apparatus which those in charge of the next execution, guided by present experience, will be able to avoid or overcome. But, in spite of these defects, the important fact remains that unconsciousness was instantly effected, and death was painless. When this is understood, together with the additional fact that less than four minutes elapsed from the time the first contact of the current was made to the time the last one was discontinued, and Kemmler was absolutely dead, it will be conceded by all fair-minded persons that the object to be attained, as far as relates to the individual, in the execution of a criminal, namely: sudden and painless death, was fully realized in Kemmler's case. And had the first contact of the current been maintained for full twenty seconds, as first suggested, in all probability there would have been no reflex movement after it was broken, and no unfavorable criticism of the result could then have truthfully been made. The reflex movements referred to were similar to those which have occasionally been observed, for a short time, in animals experimentally killed by electricity, after the current was too quickly interrupted; the animal, however, not recovering consciousness or life. Hence they may properly be regarded as involuntary muscular movements of a reflex character, following the interruption of the current, and in no sense a resumption of normal respiration, however much they may appear to be so to a superficial observer, or to one not familiar with the phenomena in animals above referred to."

At the end of his report Dr. MacDonald makes several suggestions for amendments to the present law, which will secure a more satisfactory regulation of execution by electricity in the future, and among these are the following: That there shall be only one place in the State for executions by electricity, instead of three, as at present; that a separate building shall be constructed for such executions, with suitable cells for the accommodation of criminals awaiting the death penalty; that the dynamo shall be in immediate communication with the execution room, and not a thousand feet distant, as was the case at Auburn; and that the dynamo employed for executions shall be capable of generating an electrical force of 3,000 volts.

At the November meeting of the Society of Medical Jurisprudence and State Medicine, the paper of the evening was a report on the execution of Kemmler by Dr. E. C. Spitzka, who was also one of the witnesses of the execution. He described the scene in detail, and stated that while he was not an advocate of execution by electricity, the guillotine being his preference as a means of inflicting capital punishment, he regarded the evils of that method as much less than the evils of hanging. In Kemmler's case, he said, the Warden was greatly aided by the coolness and pluck of the prisoner in all of the many steps preliminary to the turning on of the electric current. He thought, however, that many of the preliminary steps taken in this instance were unnecessary and should be omitted in future executions.

Among the criticisms that he made of the Auburn execution was that the voltmeter did not work at the time of the execution; so that there was no way by which the medical witnesses present were able to tell the voltage of the current. He believed, in fact, that the voltmeter was not expected to work; and, as far as he could make out, the strength of the current used on Kemmler was probably about 700 volts. In his opinion, the man was dead within an infinitesimal part of a second after the current was turned on. It was true that convulsive movements followed the introduction of the current into his body, but he had pronounced him dead after the current had been turned on for about seventeen seconds, and he felt perfectly confident that he was correct in doing so. Dr. Spitzka said he was now satisfied that he had made a mistake in ordering the current turned on a second time; but the muscular convulsions and emissions of air by the body threw the spectators into a state bordering on a panic, so that demoralization nearly prevailed in the room.

A phenomenon which is usually regarded as a sign of life Dr. Spitzka observed in Kemmler's body not only shortly after the withdrawal of the current but also several hours afterward, when the autopsy had been made and the brain, heart and other organs had been entirely removed, viz.: the marking of the flesh by pressure with the finger and the subsequent obliteration of the marks thus produced.

Like Dr. MacDonald, Dr. Spitzka favored the amendment of the electrical execution act so that it will provide for the establishment of but a single plant in the State; where all executions shall be carried out under the direction of a competent electrician appointed for the purpose. He agreed with him also that the engine and dynamos used should be especially constructed for the execution of criminals, and that the dynamos should be capable of generating a current of a strength of at least 3,000 volts. He thought that the contact of the current should be made preferably at the back of the neck, and that a collar could be so construct-

ed as to hold the most violent individual steady. The method used in Kemmler's case, he said, was unnecessarily trying to the nerves of the prisoner, and it involved the cutting away of portions of the latter's clothing in order to get at the base of the spine. Should it ever happen that the person to be executed was a woman, this procedure would be attended with much difficulty and embarrassment.

In conclusion he remarked: "The execution of Kemmler was a more decent and dignified execution of the law than any other I have ever seen. That the admission to the chamber of death of persons who had never before seen an execution, and knew nothing whatever of the effect of electricity on the human body, led to many extravagant and erroneous statements, I really believe. There was no warrant in law for the presence of such persons."

Among those who were present at the meeting and discussed Dr. Spitzka's paper was Dr. MacDonald, who stated that the physicians who were summoned to the execution as witnesses were not consulted about any of the arrangements, and they were not permitted to see the source of the current. During the interval between the first and second applications of the current to Kemmler he happened to go into the dynamo room, and was promptly ejected. He agreed with Dr. Spitzka that if the first application had been continued a few seconds longer, no such convulsive movements as were observed would have occurred.

The testimony of two expert witnesses such as Drs. MacDonald and Spitzka, as to the painlessness and instantaneousness of Kemmler's death, is certainly of great importance, especially in view of the fact that in the case of two or three other criminals who are now waiting the death penalty, the most strenuous efforts are being made in the courts to have their sentences set aside on the ground of the cruelty of electrical execution as exemplified in the case of Kemmler.

The recent meeting of the New York State Medical Association, a synopsis of the proceedings of which, as well as the President's able address, have already been published in *THE JOURNAL* was held for the first time in the newly enlarged Mott Memorial building, where the library of the Association has now been established. The separate papers read were on a great variety of subjects, and as a rule valuable contributions; but the chief interest naturally centered in the formal discussions which have always proved so attractive a feature of these annual meetings. The President elect, the well-known surgeon Dr. Stephen Smith, is the third incumbent of the presidential chair to be chosen from this city, his New York predecessors having been the late Dr. Isaac E. Taylor and Dr. Wm. T. Lusk.

The New York County Medical Association still continues to increase in prosperity. Each

month large accessions are made to its membership and this now amounts to over 550. At the November meeting Dr. J. Lewis Smith read one of his carefully prepared and exhaustive papers, his subject being "Appendicitis, typhlitis, and peri-typhlitis in Children."

The Academy of Medicine is now established in its handsome and commodious building on West 43d street. At the first meeting in November the reports of the delegates to the International Medical Congress, in regard to various departments of medicine and surgery, were read; and at the second November meeting, when the new building was dedicated, the anniversary of the Academy was celebrated with appropriate addresses and much festivity.

Signor Giovanni Succi, the Italian who has distinguished himself by a number of extended fasts in Europe, and whose last achievement in that line has been a reputed fast of forty days recently in London, has entered upon the task of fasting for forty-five days in this city, under the surveillance of a committee of physicians assisted by a corps of medical students. He is 38 years of age, and at the commencement of the fast weighed 147 pounds. His chest, abdominal and limb measurements were also carefully taken at that time. During his fast he allows himself a certain amount of water and also takes as occasion requires a few drops of an anodyne elixir to allay gastric or abdominal pain. He sleeps whenever he feels inclined, and during the rest of the time converses, reads, smokes, plays the piano, and even indulges in such active exercise as fencing. On the second day of the fast he was very nervous and irritable, but in excellent general condition, with a temperature of 98.9, pulse 78 and respiration 23. Tongue clear and steady. During the day he drank fifteen ounces of water and smoked two cigars. His weight had diminished to 138 $\frac{3}{4}$ pounds.

On the fifth day his weight was 134 pounds, temperature, 68.4, pulse 60; respiration 20; and he drank 13 ounces of water. On the sixth day his weight was 134 pounds, and he drank 12 ounces of ordinary water and 6 ounces of an alkaline water. On the seventh day he was unusually irritable, but he said he was not hungry. On this day he drank 16 ounces of croton water, and 8 ounces of alkaline water. His weight was 131 pounds; temperature 98°; pulse 84, respiration 22. His tongue was clear, moist and steady, and his muscles still firm.

P. B. P.

MISCELLANY.

THE AMERICAN ACADEMY OF MEDICINE.—The Annual Meeting of the Academy will be held at the College of Physicians, Philadelphia, on Wednesday and Thurs-

day, December 3 and 4, 1890. Papers will be read by Dr. Traill Green, Easton, Pa., on "The Profession's call for a better Preliminary Education of its members," Dr. Herman B. Allyn, Philadelphia, on "Paralysis following Measles," Dr. Henry E. Dwight, Philadelphia, on "The Influence of the German Universities upon our Profession," Dr. W. B. Dewees, Salina, Kansas, "Medical Education that Wins," Dr. H. O. Marcy, Boston, Mass., "The Coroner System of the United States," Dr. E. Jackson, Philadelphia, "What can be done to Save the Eyes during School Life?" Dr. Benjamin Lee, Philadelphia, "A Statistical Study of Influenza," Dr. J. Cheston Morris, Philadelphia, "A Pathological Study of Influenza," also "Interference of Molecular Vibrations as Explanatory of the Phenomena of Zymotic Diseases and Diseases of Nutrition." Papers (titles not yet given) will also be read by Dr. J. E. Davis, of Wisconsin State University, and Dr. David S. Jordan, President Indiana State University, and others. A Report will also be presented by the Secretary, Dr. Richard J. Dunglison, on "Laws Regulating the Practice of Medicine."

Dr. Samuel J. Jones, of Chicago, is President of the Academy, and will deliver his Address at the afternoon session Wednesday, December 3.

The Annual Collation will take place on Tuesday evening.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 15, 1890, to November 21, 1890.

First Lieut. Freeman V. Walker, Asst. Surgeon U. S. A. (Ft. D. A. Russell, Wyo.), is granted leave of absence for one month, to take effect on or about the 15th inst. Par. 3, S. O. 85, Dept. Platte, November 11, 1890.
Capt. Chas. M. Gandy, Asst. Surgeon U. S. A. (Ft. Clark, Texas), is granted leave of absence for three months. By direction of the Secretary of War. Par. 10, S. O. 266, A. G. O., Hdqrs. of the Army, November 13, 1890.
Capt. Henry Johnson, Medical Storekeeper, is granted leave of absence from January 1 to March 24, 1891, inclusive, with permission to go beyond sea. By direction of the Acting Secretary of War. Par. 18, S. O. 268, A. G. O., Washington, November 15, 1890.
Capt. John L. Phillips, Asst. Surgeon, is relieved from further duty at Ft. Crawford, Col., to take effect on his relinquishing the unexpired portion of his present leave of absence, and will report in person to the commanding officer at Camp Guthrie, Oklahoma Ter., for duty at that station, reporting by letter to the commanding General, Dept. of the Missouri. By direction of the Acting Secretary of War. Par. 7, S. O. 269, A. G. O., Washington, November 17, 1890.
Capt. Henry G. Burton, Asst. Surgeon, is granted leave of absence for six months on surgeon's certificate of disability, with permission to go beyond sea. By direction of the Acting Secretary of War. Par. 9, S. O. 269, A. G. O., Hdqrs. of the Army, November 17, 1890.
Capt. Edward B. Moseley, Asst. Surgeon U. S. A., is granted leave of absence for one month. S. O. 100, Dept. Texas, November 17, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 22, 1890.

Surgeon J. G. Ayers, ordered to the U. S. receiving ship "Wabash."
Sheldon Guthrie Evans, commissioned an Asst. Surgeon in the U. S. Navy.
Medical Director N. L. Bates, ordered as President of Naval Medical Examining Board at Mare Island, Cal.
Surgeon A. M. Moore, ordered as member of Naval Medical Examining Board at Mare Island, Cal.

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ORIGINAL ARTICLES.

HAS PROGRESS BEEN MADE IN THE MEDICINAL TREATMENT OF TYPHOID FEVER?

*Read in the Section of Practice of Medicine, Materia Medica and
Physiology, at the Forty-first Annual Meeting of the American
Medical Association, at Nashville, Tenn., May, 1890.*

BY T. J. HAPPEL, A.M. M.D.,
OF TRENTON, TENN.

EX-PRESIDENT TENNESSEE MEDICAL SOCIETY.

Almost semi-annually the medical public is treated to announcements of new remedies that are either infallible cures for, or at least very largely diminish the death-rate in many diseases, most notably, continued fevers. At once the enthusiasts rush into the field of experience and soon medical journals teem with reports of successes, beyond expectation from every quarter. These reports grow less and less favorable. The roseate hue disappears, and soon opposite reports begin to fill the pages of the same journals and finally the pendulum swings to its furthest point and begins to return.

The result is a few advocates of the theory remain; but the large majority, disappointed, return to their old modes of treatment. The question naturally arises: *Cui bono?* Does good result from such experimental work? I answer promptly, "Yes." Again and again a new and plausible theory is advanced to take the same course just outlined, with the same result. Well, if there is good, in what does it consist? Finding that failure so often attends the use of new systems and modes of treating diseases, the physician begins to investigate his cases more closely, finds that frequently the proposed mode of treatment cures some cases, but they are not typical cases of the disease under consideration. In fact, a careful diagnosis would show that those cases cured were not cases of typhoid fever, but were cases of some of the types of so-called malarial fevers. I would suggest then at the very outset of what I may have to say, that everything depends as to cures and curative measures upon a careful diagnosis of all cases treated. Too often the physician falls into a routine diagnosis, as well as a routine way of making a diagnosis. One physi-

cian diagnoses all cases of fever as "typhoid fever" which do not respond to his usual remedies of quinine and calomel for remittent fever; another—one in my circle of friends, a gentleman of high professional standing, asserts that when he has given 20 grs. of quinine night and morning for several consecutive days and fails to arrest the fever he is sure that he has to deal with a case of typhoid fever.

In my limited experience, I have seen a number of such cases under such circumstances,—cases which refused to respond to either ordinary or heroic doses of quinine—yet the progress of those cases through a siege of from three to eight weeks, proved conclusively that they were not cases of typhoid fever. There was but one point of resemblance to typhoid fever throughout their whole course, and that was their duration. Rarely are post mortem examinations to be had in such cases, but in the few made, none of the typical lesions of typhoid fever have ever been found, showing that they were not cases of typhoid fever.

Before, then, entering upon a discussion of the treatment of these fevers, and especially of typhoid fever, a careful and painstaking examination and investigation of their clinical history must be made with a view to diagnosis between typhoid and continued remittent fevers. When we are certain as to the nature of the disease with which we have to contend, then and then only are we ready to discuss the treatment. In the continued remittent fevers, many cases of which have been met with in the last few years in West Tennessee, where the whole history of the attack can be gotten from a careful observer, no difficulty in diagnosis can be experienced, but otherwise, it is very difficult.

In an article on "Typho-Malarial Fever, so-called," read by me before the State Medical Society of Tennessee in 1886, (See Transactions of that year, pages 85 and 86) I reported the only two cases of this form of continued fever which I had seen or treated up to that time: since then I have met with a number of such cases, the duration of which, and their resistance to the action of quinine in large and small doses would have led one to infer that they were cases of typhoid fever, but when the clinical history of the cases were taken, there was no longer any ground upon which to

found a belief that they were typhoid. The diagnostic features of that disease were wanting. In the majority of the cases, there was no tympanitic distention, except from occasional errors of diet, no gurgling, no rose colored spots, no hæmorrhages from the bowels, no epistaxis, no low muttering delirium, such as is so often met with in typhoid fever; and above all, the temperature chart in all cases showed too great a morning and evening variation.

Another marked peculiarity of the cases was the tendency towards prolonged cold stages in the third, fourth, and fifth week of the disease, with no proportionate febrile reaction—the stages—the paroxysms, being usually an indication of a change in the character of the fever from a remittent, to an intermittent type and the beginning of a rapid improvement. There was shown a disposition to relapse in some of the cases. The prognosis was favorable. I met with but one fatal case in my own practice, and death in that case resulted from congestion of the lungs due to imprudent exposure in an algid condition.

As stated previously, a careful review of the whole clinical history of those cases satisfied an impartial observer that they were not cases of typhoid fever, and I can find no better name for them than that of continued remittent fever.

In a paper read before the West Tennessee Medical Society by one of its members, he reported a large number of cases of typhoid fever treated by him in and around Martin, Tenn., and cured by administering to them early in the disease calomel in full doses, followed by quinine in 30 gr. doses night and morning for several days. Not a case terminated fatally, but the fever rapidly yielded—was aborted—cured by the calomel and quinine treatment.

A physician living in a neighboring town in discussing the paper stated that his practice overlapped that of Dr. —, and that *he* had seen scarcely a case of genuine typhoid fever that season, but had met with a number of cases of remittent fever that had resisted ordinary methods and had been protracted to three or four weeks or more, and that these cases were among the very ones denominated “typhoid” by the author of the paper. The surroundings of the town were such as to give rise to cases of continued remittent fever, the adjacent country and the town itself being almost one large saw mill. Sawdust lay around decomposing in every direction, whilst, it being a new place, there was little or no animal matter to pollute the water supply or poison the air.

Now with the statements made, and proof adduced, I think we are ready to briefly review some of the different methods of treating typhoid fever and compare the results obtained thereby, carefully excluding cases of continued remittent fever.

In the early days of West Tennessee there were

no cases of typhoid fever. In the memory of some of the older practitioners, the impression made upon them, by the first cases of that type of fever with which they came in contact, are very vivid. It was a disease of which they had read, but with which they had no experience and the treatment of those cases by calomel and jalap followed by active purgatives, bleeding, and quinine, generally produced fatal results. That was the course then pursued with the malarial fevers which they treated. The failure of remedies that they considered infallible, led them to investigate more closely their cases, and they soon found that they had a distinct fever, to treat different in many respects from what they were pleased to call their bilious fevers.

The lancet, calomel, and quinine were soon recognized as failures, the mortality being high, nearly fifty per cent. of the cases so treated dying. The lancet was with reluctance discarded and still the cases died. Active purgatives were abandoned. Later on we were taught that mercury given in some form, and continued long enough to produce slight ptialism was highly recommended. In connection with this treatment we were taught that inasmuch as the disease was a self-limited one, and inclined to continue for a long time, the *general* abstraction of blood was to be avoided, but local bleedings were highly commended. Leeches and cups were to be used over painful tender spots. Attention was called to alimentation, and proper forms of food were discussed. Conjoined with this plan of treatment, turpentine was directed as an agent to stimulate the healing of the ulcerated glands and for the relief of gas, etc.

The mortality tables show an improvement—the percentage of death was still high and the specific was not yet found. Prof. Wood asserted in his work on “Practice,” edition 1860, that all cases recovered where the remedy was begun with early and continued without cessation throughout the disease, but such was not the success of others—the mortality reaching from ten per cent. to thirty per cent.

It would be a work of supererrogation to refer to all the different modes of treatment, heralded to the world as specifics for typhoid fever.

The acid treatment was recommended by high authorities as the most rational mode of procedure and statistics were adduced to prove that it was the best of all. But as in the case of other remedies, other users of it did not obtain the same happy results.

We were taught that the high temperature was an important factor in producing fatal results, and cold or tepid spongings; the packing process, veratrum veride, aconite, and other remedies were strongly advocated by some in high positions in the medical profession, but they too met the same fate as the others already named.

One set of statistics proved that the percentage of fatal cases was reduced, whilst another, satisfactorily established the other side of the case.

Salicylate of soda was to work miracles in curing cases of typhoid fever, by virtue of the many properties that it possessed, not existing in any other one remedy. But alas, many of us found to our sorrow that cases where it was persistently used terminated more frequently in hæmorrhage from the bowels, than where any other remedies had been tried. So that, in the opinion of the writer, the remedy proved to be a step backward.

Again, the fatal results in typhoid fever were claimed by some authorities to be due to the accumulation of effete, septic material thrown off into the alimentary canal by the ulcerating patches and glands, and that the remedy for this condition was to keep the bowels moving loosely several times a day. Hence small doses of magnesia sulphate or of soda bitartrate were recommended; or, if there were reasons for avoiding a purgative, the daily use of the syringe. But the death-rate did not, to put it mildly, decrease.

Another process more recently pressed as an agent capable of reducing the death-rate to 3 per cent. or even less, is that of cold bathing as recommended by Brandt. This cold bathing of Brandt must not be confounded with sponging, cold-packing, or other forms of cold bathing. To accomplish the results claimed for it, all the minutiae of the plan must be attended to, the tub must be brought to the bedside and filled two-thirds full of water. The bathing must be begun early, *even before a diagnosis can possibly be made*. I would suggest just at this point that the longer before a diagnosis can be made, the bathing is begun, the greater the per cent., *me judice* of cures, because the greater the number of febriculæ and simple continued fever cases you are apt to have to treat.

At a recent meeting in New York City of the Section on Practice of the Academy of Medicine, Dr. Simon Baruch read a review of the many discussions of the treatment of typhoid fever, and closed with an earnest appeal for the adoption of the cold-water treatment as recommended by Brandt. According to Dr. Baruch the cold bath works wonders. It reduces temperature, strengthens the action of the heart, deepens respiration, increases the action of the kidneys and skin, and improves digestion, and creates a desire for solid food. All of which brightens and strengthens the patient and *post hoc, ergo propter hoc*, must prevent the accumulation of effete material in the system.

Dr. Baruch gave an elaborate description of what constituted a cold bath *a la* Brandt, as contra-distinguished from the wet pack, cold sponging, cold effusions, and the various methods in vogue of applying either tepid or cold water to fever patients. For a description of this method, reference is made to the *Medical and Surgical Re-*

porter of March 29, 1890, page 380. The mode of using is a complicated one requiring the aid of at least four helpers, two for day and two for night service. The plan could be carried out only in a well regulated and thoroughly equipped city hospital, and hence would avail but little to the general practitioner in private practice outside of a city. But while the rationale sounds well, and the best results have been reported by Brandt, Vogt, and Bouveret, a mortality of less than 3 per cent. being reported, we are forced to admit with all the evidence before us, that the case is not proven.

There is not a practitioner here present, who, if he will make it a rule to treat *every* case of fever with systematic bathing conjoined with quinine, could not make equally as favorable an exhibit. Stress is laid upon the commencement of the bathing process before a diagnosis can be made. This is an important point. If we wait until we are fully satisfied that we have a case of typhoid fever to treat, we will find that Brandt's method will offer no advantages over former methods of treatment when the great inconvenience attending the use of it is considered. Its advocates must at least admit that it is, as yet, *sub judice*.

The only way in which reliable statistics can be obtained in regard to curative measures in the treatment of typhoid fever is to exclude all cases classed as doubtful from our calculations.

As intimated in the early part of this paper, it is strange how two practitioners of medicine having fever cases in the same neighborhood will meet with such different types of disease. One will denominate all of his cases typhoid because they refuse to yield promptly to ordinary treatment, and the other reports his as obstinate cases of remittent fever. One or the other is mistaken, and where the surroundings all favor the development of the malarial fevers, I would be inclined to regard all of those cases as of the continued remittent type.

Instead of the practitioner establishing the fact that he has discovered a new method of curing typhoid fever by large doses of quinine and calomel he simply proves his inability to diagnose the disease he is treating. There is always an inducement to call a protracted case of fever "typhoid;" that explains why it does not recover promptly; but call it "continued remittent fever," and the family expects the disease cured at once, because "any physician ought to be able to cure bilious fever."

The Brandt bath is claimed to be "not a nervous sedative," but a "refreshing measure by which the depressing effect of the typhoid poison is counteracted." That the impact of the cold water on the surface causes deeper inspirations, inhaling in consequence more oxygen and giving off more carbonic oxide, sending a refreshing im-

pulse to the nerve centres supplying the heart and stomach—thus imparting tone to the one, and stimulating into activity the secretions of the other.

It seems to me that if this is the *rationale* of the tedious, tiresome, and frequent bathings of the Brandt system, we have other agents that can accomplish as much without any more danger, with far less inconvenience, and as much certainty.

I enter a protest that the mortality in typhoid fever cannot be reduced to from 1 to 3 per cent. by any such procedure, but that the errors in diagnosis account for the vast discrepancy.

I agree with Dr. Joseph Jones, of New Orleans, who in a paper read in April, 1889, before the State Medical Association of Louisiana, took the position that, "allowing due weight to the effects upon the rate of mortality in different modes of treatment, of the variations of climate, condition and degree of severity, it must be admitted that the rate of mortality in the great class of febrile diseases has steadily diminished during the past thirty years."

"With reference to typhoid fever, which may be selected as a type of these acute febrile diseases, which are self-limiting and show a tendency to spontaneous recovery, the search after remedies which may subdue or modify the febrile movements have met with at least partial success."

Instead of the tedious and oftentimes impossible bath of the Brandt system, we can reduce the temperature of our patients without any more danger than experience and further use will prove to be present when the system is more extensively used, by the judicious administration of antifebrin or phenacetin. I use the term "judicious" advisedly, because remedies that are so powerful for good, must be equally capacitated for evil, when used carelessly. Antifebrin given in such doses as the patient is found to bear, will accomplish in one hour what is effected by the Brandt system in three times that length of time. The pulse will be reduced in frequency and its tonicity improved; the temperature will rapidly approximate the normal point, and there will be produced the same good effect upon the appetite by it, that is found in cases of the bath. In proportion as the temperature is kept near the normal point will the heart be strengthened, and the stomach stimulated, and *vice versa*, with the high temperature. The control of the fever is a most important element in the treatment of typhoid fever, and in the class of remedies at the head of which stands antifebrin, we have agents superior to any heretofore in use with which to keep the heat within bounds. I do not deem it necessary to discuss the uses and action of antifebrin on the system. A most important feature in its action is in the decided increase of the general euphory of the patient. There is a greater desire for, and a greater power to assimilate food and drink. There is a decided

decrease in temperature, and a reduction in the frequency, with a corresponding increase in the strength of the pulse—just those points that are claimed for the Brandt bath, but in addition we have as another effect, an increase in the amount of urine voided.

To this extent, if no other, could we successfully assert that progress had been made in the treatment of typhoid fever; but we can go a step further, and I trust show that in the phenol remedies we can present agents which have more claims to merit in the treatment of typhoid fever, as well as the continued malarial fevers, than any other medicines hitherto used.

In the last three years every case of typhoid fever, and my continued remittent fever cases, have been early treated with carbolic acid, either alone or combined with iodine, and in that time I have not had a single death from typhoid fever where the stomach of the patient could tolerate the remedy. I have thought that where iodine and carbolic acid could be administered together, I obtained more satisfactory results. One case of typhoid fever terminated fatally, where neither of the remedies were borne for any length of time. During the first three weeks of the disease an occasional dose was tolerated of the mixture, and with the aid of not more than 5 grs. of antifebrin in twenty-four hours, the temperature never rose above 102.5°, but at the end of that period, the stomach no longer tolerated them, and the patient died in the sixth week of the disease.

I have seen in the last year three fatal cases of typhoid fever in consultation, treated with turpentine and the acids. Death in these cases was caused by hæmorrhage from the bowels.

If the experiments of Pasteur and others have proved that many, if not all diseases are due to the presence and active development of living germs in the system, then certainly specifics—curative agents for those diseases must be remedies to destroy those germs—bacilli.

Dr. W. F. Glenn, of Nashville, Tenn., in an able paper read before the Tennessee State Medical Society at its last meeting, April, 1890, upon the "Phenique Compounds in Germ Diseases," discussed the fermentation question, as applied to zymotic diseases, showing how, when the specific microbe is introduced into the blood, it begins to multiply, and in proportion to this multiplication of disease cells, how the temperature rises.

He agrees that the fermentation process in the wine vat is not exactly analogous to that which takes place in the human system because, in the first place, only inert matter is to be dealt with, whilst in the latter living cells possessing catalytic powers, and that these cells are able to resist to a great extent the fermentation process. That "the greater the resisting power of the living cells, the milder the disease, on account of a less degree of fermentation." Now then, if typhoid fever be a zy-

motie disease, it is plain that in order to arrest it, it is but necessary to stop the so-called fermentation, or development in the blood of these microbes.

Dr. Glenn asserts that the experiments of Dr. Calvert prove that "the salts of quinine in solution will destroy all vegetable fermentation; salts of mercury in solution, all animal fermentation; and a pure solution of carbolic (phenique) acid, both."

If, then, enough carbolic acid can, in safety, be introduced into the blood of our patient, to destroy these germs, we will cure the disease, and if only enough is introduced to modify the fermentation process—that is, to destroy a portion only of the germs, or to impart to the living human cells power to resist the action of these germs; then the temperature is proportionately reduced, and the patient put into a condition to resist with greater success the disease, which, being self-limited, will run its course without danger to life.

Dr. Glenn contends that with the pure carbolic acid preparations this can be done; that enough can be given to destroy the germs and thus cure the disease; that the poisonous effects of the carbolic acid result from, and are due to the presence of impurities in the acid.

He states that for the last ten years he has employed phenique acid in the treatment of typhoid and malarial fevers as well as the eruptive ones, and in typhoid fever he "never had a diarrhoea, a hæmorrhage, never a serious tympanitis, never a death."

He believes that with antifebrin to reduce the high temperatures, when needed, and with phenique acid as a curative agent, "we possess the treatment *par excellence* of all zymotic diseases."

Dr. Glenn's experience in the use of carbolic acid, agrees exactly with my own in the same direction, though, as I stated, I usually combined iodine with the acid. I have thus referred to most of the important "forms" or "phases" of treatment of typhoid fever, without any reference to the varied complications that must be met as they are presented; nor have I touched upon the questions of nutrition and hygienic surroundings, etc., all of which must be closely attended to, but I have directed attention solely to medicinal agents that were given with a view to curing the disease, by shortening its duration and hastening the repair of all the lesions developing in the course of the disease. Time would be lacking to discuss forms and modes of nutrition, quieting delirium, etc. Now as to the mortality under the different forms of treatment:

1. Under bleeding and free purgatives we have no reliable data; but reports place the death-rate at 50 per cent.

2. When bleeding was abandoned but purgatives still continued, the mortality was reported to be from 30 to 40 per cent.

3. Under the turpentine treatment conjoined with careful feeding, we find reports showing a death-rate varying from 10 to 30 per cent.

4. Under the acid treatment, taking the tables furnished by several eminent physicians, we find the deaths to be below 10 per cent.

Thus I might continue to note the rates of mortality shown under the different modes of treatment, but most of you have access to more sources of information on those points than I have, and can read for yourselves.

To sum it up, I will only add that, allowing due weight to the reports on the Brandt method of the treatment of typhoid fever, this shows a further improvement in the prognosis of the disease, but owing to the want of accuracy in the diagnosis of cases treated by that method, we can only say that the rate of mortality is lessened not through any specific effect of the treatment *per se*, but as a sequence of keeping the patient in such a condition as to enable him to resist the attacks of the typhoid germs.

But in the last mentioned plan of treatment, viz.: antifebrin or phenacetin to keep the temperature at or below 102°, and thus place your patient in the same condition that the Brandt system does; and the phenique preparations, either alone or combined with iodine or ammonia, to destroy the bacillus typhoides, we have a rational mode of procedure that offers to the medical profession some hope in the near future of being able to say that typhoid fever can be cured; not that it is a self-limited disease, and that this or that plan of treatment enables you to sustain your patient till the disease has run its course and pabulum is no longer furnished upon which the germs thrive; that this pabulum is destroyed and hence the bacillus dies, or that the bacillus is itself destroyed.

In concluding this article I desire to call your attention to two effects of the carbolic acid treatment, which Dr. Glenn notes, and which my experience also substantiates, namely: the tendency to constipation, and in a slight degree to render the blood less fluid. The judicious use of mild laxatives, or the syringe will be needed to relieve the first, and the second can be met by administering ammonia in combination with phenique acid, in the form of ammonia phenate.

The use of the phenique preparations will be found also to lessen the temperature, and hence there will be less demand for antipyretics. So long as the temperature does not go beyond 102° I do not use antifebrin, but depend upon sponging with cold or tepid water, whichever I find to be most pleasing to the patient.

In regard to the question of ventilation and disinfection of the sick apartment, and the disposal of all the discharges of the typhoid fever patients, I deem them as matters no longer *sub judice*; they have been settled.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.

Read before the Medical and Chirurgical Faculty of Maryland, November 12, 1890.

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The object of this paper is to advocate a rational discrimination in the treatment of fibroid tumors of the uterus.

Uterine fibroids differ greatly in size, situation, structure and character of the symptoms to which they give rise. The treatment demanded by these differences likewise varies.

In structure, fibroid tumors are homologous with the tissue of the organ in which they are found. They are composed of muscular and fibrous tissue in varying proportions usually encapsulated by a connective-tissue capsule, in which large vessels ramify. In some cases, the growth is made up principally of muscular tissue, in others almost exclusively of white fibrous tissue. In the majority of cases, however, the growths are composed of varying proportions of these two tissues, sometimes the muscular, at another the fibrous predominating.

Most fibroid tumors, especially if of moderate size, are firm and solid, but the larger growths frequently have cysts or cavities filled with a lymphoid fluid. These fibro-cystic tumors often cause no little difficulty in diagnosis, being sometimes mistaken for ovarian cysts, at others confounded with pregnancy. It must not be forgotten that pregnancy and fibroid tumors may co-exist, although happily this combination is not very frequent.

Fibroid growths may occupy any portion of the uterus. Their site of predilection appears to be the fundus and posterior wall of the corpus uteri. Schroeder found 92 per cent. in the body of the uterus and only 8 per cent. in the cervix.

With reference to their situation in the uterine walls, fibroids are usually classified into sub-mucous, subserous and interstitial.

The submucous project into the uterine cavity, the subserous toward the cavity of the abdomen, and the interstitial occupy a more or less intermediate position between the inner and outer walls of the uterus. As a matter of fact, most large fibroid tumors begin as interstitial or intramural growths, and become submucous or subserous in consequence of the contractions they excite in the muscular walls which forces them either inward or outward.

Fibroid tumors may undergo fatty degeneration and be absorbed, they may slough and be cast off through the genital canal, they may undergo calcareous change and become encysted, and be thus carried through life, or may slough out in

the form of concretions which have received the name of uterine stones. Finally they may undergo sarcomatous degeneration and become malignant. All of these terminations are, however, exceptional. Generally the tumor continues growing until or after, the menopause, and gives rise to symptoms more or less troublesome, and in many cases sufficiently serious to demand active measures of relief.

The most pronounced symptoms of fibroid tumors of the uterus are pain, hæmorrhage, and interference with the functions of other organs by pressure. They may also produce great discomfort by their weight. Occasionally the sub-mucous variety undergo sloughing, when they may cause the death of the patient by septicæmia.

The pain produced by uterine fibroids is sometimes so severe as to be alone a sufficient reason for medical or surgical interference. It usually manifests itself at the menstrual periods as dysmenorrhœa, but may be constantly present as severe backache, bearing down simulating labor pains, especially in the submucous variety, or neuralgia of the sciatic nerves. Sometimes there is persistent pain in the uterus itself, or more probably in its peritoneal covering which is subjected to irritation or inflammation.

Comparatively small fibroids situated low down in the uterine walls or in the cervix may cause severe irritation of the bladder by pressure. There is often vesical tenesmus with frequent micturition, causing the most intense suffering.

The pressure upon the rectum may also give rise to constipation and great pain on going to stool. Hæmorrhoids and cedema of the lower extremities are not infrequent complications due to interference with the venous circulation. During the menstrual periods these pressure symptoms are generally increased in severity. Intra-pelvic or intra-abdominal pressure may also cause ascites, and in some cases localized peritonitic processes.

Hæmorrhage is in most cases the symptom that urgently demands remedy. It is most frequent and gravest in the sub-mucous tumors, but may be an accompaniment of any variety. It may be alarming in cases where the tumors are so small as to be detected with difficulty on bi-manual palpation. The bleeding usually occurs at the menstrual periods which are prolonged and more profuse than normal. The menstrual interval may be normal in duration, but in many cases is shortened, so that the bleeding recurs in two or three weeks. The blood is frequently discharged in large clots. Indeed the discharge of clots at the menstrual period is an absolute indication of something abnormal, and should always invite attention to the condition of the uterus. In a very large proportion of cases it will be found to be an outward sign of fibroid growths.

A definite relation exists between uterine fibroids and sterility. Whether the sterility is a cause or a consequence of the morbid growths is not positively determined. Statistical compilations show that above seventy-five per cent. of the women having fibroid tumors have never borne children. This may be regarded as fortunate, for in cases of labor complicated with uterine fibroids over half of the mothers and nearly two-thirds of the children die.

The treatment of fibroid tumors of the uterus is preëminently surgical. Even the administration of ergot and savine may be looked upon as a surgical method of treatment, for the effect striven after in the use of these remedies is the extrusion, or partial extrusion of the growths, whose removal is completed by surgical means. While the deaths directly due to the use of ergot are probably few, most writers discountenance the treatment for these reasons: the ergot treatment is tedious, painful, often ineffective and even at times dangerous. When the tumor is forced into the uterine cavity, or through the cervix by the contractions induced by the medicine, the practitioner must be ready to interfere surgically, otherwise sloughing and sepsis are imminent.

The ideal operation for a fibromatous tumor is the removal of the tumor, leaving the uterus intact. Unfortunately in many cases this result cannot be attained. Nevertheless this should be striven for wherever possible. The marvelous success of Schroeder and Martin in enucleating fibroids and thus preserving the uterus should encourage us to an imitation of their work. The enucleation of fibroids whether by the genital canal, or by laparotomy is in the true line of conservative surgery.

When a submucous tumor projects into the uterine cavity or the vagina, its attachment is usually by a pedicle of greater or less thickness. When the pedicle is thin the tumor may be twisted off. The torsion seems to arrest all hæmorrhage at the same time from the highly vascular mucous membrane covering the pedicle. When the latter is thick, attachment may be severed with scissors, ecraseur, or galvano-caustic wire. I prefer the latter method as less dangerous, cleaner, more rapid and thoroughly aseptic.

When the tumor is attached by a sessile base, the mucous membrane and capsule over it may be split with a knife after carefully dilating the cervix under antiseptic precautions, and then enucleating the tumor from its base. To arrest hæmorrhage a tampon of iodoform or creolin gauze may be packed against the bleeding surface. Great care is requisite, however, not to allow the tampon to remain too long, as the secretions may be backed up through the tubes and cause salpingitis or other inflammatory dis-

turbances in the pelvic cavity. I am sure I produced a pelvic peritonitis in one case by the improper use of a tampon to arrest hæmorrhage after amputation of the cervix.¹

Sloughing of a submucous fibroid is not necessarily fatal, as careful disinfection of the genital canal before and after operation will often avert sepsis.

Vaginal enucleation of subserous tumors of the cervix may sometimes be practiced. The operation was first done by Czerny. An incision is made through the vaginal fornix, avoiding the large vessels on the sides of the cervix, and the tumor enucleated from the tissue of the cervix and the pelvic connective tissue.

Tumors of considerable size may be delivered by intra-uterine and vaginal enucleation. If the growth is too large to remove entire it may be diminished in size by subdividing it with scissors, saws specially devised for the purpose, or the galvano-caustic wire. The operation should always be completed at one sitting, for to allow part of the tumor to remain is an invitation to septic absorption. Judgment and experience are required, however, to decide when the growth has reached a size that does not permit its safe removal by way of the vagina.

The enucleation of fibroids through an incision in the abdominal wall—laparo-myomectomy—is indicated in certain cases where the tumor cannot be removed by the vagina. It is at once a graver operation than the latter, and accompanied by a considerable mortality. If the tumor is subserous and attached by a thin pedicle, its removal after section of the abdominal walls is not difficult. The pedicle may be transfixed by a double ligature and tied tightly, the tumor cut off above the ligature, the peritoneum stitched over the end of the stump, and the external wound closed. Unfortunately the tissues of the pedicle often shrink after the tumor is removed, and hæmorrhage may take place from the stump. To avert this accident various measures have been adopted by different operators. Some remove a wedge-shaped plug from the face of the stump and sew the opposing raw surfaces firmly together by deep and shallow sutures, lastly bringing the peritoneum together over all. This is usually efficient, but consumes valuable time. Other operators clamp the stump in a wire-snare (Koeberle's *serre-nœud*) or a constrictor of parallel steel bars (Keith's clamp), and bring it outside of the abdominal wound, where the constricted portion of the stump mummifies or sloughs off. The peritoneal covering of the sides of the stump is stitched to the parietal peritoneum, and so

¹ In reference to this point Sir Spencer Wells says: "I have occasionally put on one or two prs. of pressure forceps to a pedicle, either before cutting away the polypus, or when bleeding occurred after cutting away, and have left the forceps hanging out of the vagina for several hours; and I prefer this method to the more common one of applying perchloride of iron and plugging the vagina."

closes the peritoneal cavity against any discharges from the end of the stump. This method gives better results than the intra-peritoneal method, but leaves much to be desired in the way of surgical neatness and rapidity of healing. It is also at times attended by other inconveniences and dangers, especially if the pedicle and uterus are much put upon the stretch.

When the growth of the tumor is sessile and directly under the peritoneum, or covered by a very thin layer of uterine tissue, it may be enucleated by making a bold incision over the tumor, and shelling it out of its base.

To guard against excessive bleeding an elastic ligature—a piece of rubber tubing—may be tied around the cervix, including within the ligature the arteries supplying the uterus and appendages. Even large growths may be removed in this way. If the cavity left in the uterine tissue is too large to get good coaptation between its walls, it may be packed with iodoform gauze as practiced by Fritsch, and the edges stitched to the abdominal incision, in order to secure free drainage and make the cavity accessible to external treatment.

Deep intra-mural, or even submucous tumors may be treated by this method, but the results are less and less favorable the more the uterine cavity is opened.

Sometimes the uterine walls are so occupied by the new growths that their total removal can only be accomplished by the excision of the entire uterus, or at least that portion above the cervix. This operation is one of the gravest in surgery, and gives, in the hands of nearly all operators, a high mortality. The total extirpation of the uterus including the cervix by way of abdominal section has not been very often done, but with present methods should give more favorable results than supra-vaginal hysterectomy.

In the latter operation the stump very often gives trouble, either from hæmorrhage or sepsis.

Complete removal of the uterus at the vaginal junction, approaches the conditions of vaginal hysterectomy, and should give very little higher mortality than the latter. However, at best, the complete or partial extirpation of the uterus is an operation of great gravity and should only be resorted to when all other means promising success have been tried.²

Tait has called especial attention to the soft œdematous myo-fibroma, which often gives the impression on examination, of containing cysts. This tumor frequently fluctuates in size, being now larger, now smaller, without any apparent cause. These, as well as fibro-cystic growths of the uterus are particularly suitable for complete extirpation by abdominal section. No other op-

eration or method of treatment seems to control their growth or arrest the hæmorrhage which is a frequent accompaniment.

In 1872, Lawson Tait, of Birmingham, and Alfred Hegar, of Freiburg, almost simultaneously devised the operation of removal of the uterine appendages—ovaries and fallopian tubes—with the view of artificially inducing the menopause, and thus arresting the growth of fibroid tumors by cutting off the principal source of blood-supply to the growth. This operation has now probably been done over one thousand times with very satisfactory results. Tait's own results as shown in a statement recently furnished by him³ are extremely favorable. In 426 cases 16 died, a mortality of 3.75 per cent. Tait also declares that 95 per cent. of the cases of fibroid operated by removal of the uterine appendages are cured, that is to say, the bleeding is arrested and a large proportion of the tumors diminished in size, some disappearing altogether. These effects have been established by many observers especially when the cases have been properly selected. As above pointed out, in the soft œdematous growths the arrest of the bleeding does not seem to follow so regularly as in the hard, nodular fibroids.

The cause of the arrest of the hæmorrhages after removal of the appendages is probably due, as suggested by Mr. Knowsley Thornton,⁴ to cutting off the blood-supply by ligature of the large vessels in the broad ligaments, and not merely to removal of the ovaries and Fallopian tubes. As a matter of fact the mere extirpation of the ovaries alone often fails in producing the expected results.

The high mortality of the abdominal hysteromyomectomy, and the opposition on many sides to the removal of the ovaries which it was claimed by many, unsexed the woman,⁵ led Dr. George Apostoli, of Paris, about 1882, to experiment with the galvanic current in the treatment of uterine fibroids. It is true, Cutter, Kimball, and perhaps others had used galvanism successfully for this purpose before, but Apostoli developed a method by which the application of electricity is reduced to scientific exactness. The improvements in the instruments for generating, measuring, and applying electricity now permit the physician to administer this remedy with as much exactness in dosing, as any other therapeutic agent at his command. It would take too much time here to describe the apparatus or the methods in use. For a full description I refer to pages 327-350 of "Practical Electricity in Medicine and Surgery," by Liebig and Rohé, and to Dr. G. Betton Massey's excellent little book on "Electricity in Diseases of Women,"

² Several American surgeons have done complete extirpation of the uterus successfully, and A. Martin reports eleven recoveries out of sixteen operations, a pretty high mortality. Fritsch's mortality in all cases of hystero-myomectomy, including enucleations is 25 per cent., Bantock's 22 per cent.

³ MacNaughton Jones, Diseases of Women, 4th Ed., p. 340.

⁴ Am. Gynecol. Trans., 1882.

⁵ This objection is not tenable as the "unsexing" consists merely in anticipating the menopause, which is one of the natural characteristics of the human female.

both published by F. A. Davis, Philadelphia.

In 1887 Dr. Apostoli reported 278 cases treated by this method with a successful result (arrest of hæmorrhage, diminution in size, disappearance of pain and pressure symptoms) in 95 per cent. The average number of applications was fifteen in each case. In August, 1889, Dr. Thomas Keith and his son, Dr. Skene Keith, published a detailed record,⁶ without commentary, of 106 cases treated according to the method of Apostoli. The average number of applications in the cases treated to a termination was twenty-eight. Three of the cases died during or shortly after the discontinuance of the treatment, but in neither case was the fatal result attributable to the applications. Admitting, however, for the sake of argument, that the electricity was the cause of death, a mortality of 3 per cent. cannot yet be claimed by any operator in hysterectomy, and even in the comparatively safe operation of removal of the appendages, very few operators can show as favorable results as Keith has obtained with electricity.

I have carefully gone over the record of the cases reported by Keith and have been surprised at the almost uniform improvement noted. Diminution in size of the tumor, arrest of hæmorrhage, relief of pain, and general improvement in the nutrition and spirit of the patient are recorded in nearly every case.

August Martin, the greatest living gynecological surgeon of Germany, has very recently⁷ referred to ten cases treated by him, in the following words: "The results in those ten cases show that hæmorrhage, the most troublesome and dangerous symptom of myomata, may usually indeed, be controlled, in fact, in those large multiple tumors, which apparently were situated intramurally, and included the fundus, hæmorrhage ceased nearly entirely. Several small tumors were not influenced in the same manner, and the hæmorrhages continued unchanged in spite of very frequent sittings, so that here the result must be regarded as a very doubtful one. One patient, who had a myoma of the size of an ostrich egg, had such violent pains after seven sittings, that she insisted upon being operated. The operation was performed and the patient recovered. A second symptom, often so frequently complained of, is the phenomena of pressure. These disappeared in all of nine cases, so that in this respect the result is very satisfactory. An essential decrease in size has, up to now, not been obtained in any case."

This is not very enthusiastic, but Dr. Martin admits that the symptoms for the relief of which hysterectomy is at all justifiable, were relieved in his cases. He states that he shall continue "making experiments with the procedure."

Numerous other competent observers in France, Germany, England and in this country have had successful experience with this method, and although there is still a good deal of sneering at the method as being useless, and withal dangerous, and those who use and advocate it are denounced as quacks and "low-down, no-account sort o' pussons" generally, electricity in the treatment of fibroid tumors of the uterus has come to stay, and demands investigation. Ridicule and denunciation are no answers to plain records of facts submitted by Apostoli, Zweifel, Martin, Keith and many others, less eminent perhaps, but still of some account in the world.

Some of those who use the electrolytic method, apply it in office or dispensary practice allowing the patients to walk or ride considerable distances after the application. This I regard as imprudent, and likely to cause trouble. All the cases in which serious symptoms or a fatal result followed after the use of electricity were such as had imprudently exposed themselves. I regard it as important that several hours at least of perfect rest should follow each application. To allow this course to be pursued it is requisite that the patient should be treated at her own home, or in a properly fitted institution.

It goes without saying that careful asepsis of the genital canal should be maintained during the electrical treatment as well as in the gravest and most delicate surgical operations.

Laparo-hysterectomy puts the woman in jeopardy of her life and keeps her a helpless invalid for at least one month. The electrolytic treatment keeps the patient under moderate restraint for a period of two or three months, does not endanger her life, and leaves her generally in such a condition of comfort and health that she is satisfied to live her allotted days, even though she is obliged to carry her tumor with her to the grave.

I would not advocate the exclusive use of the electrical method in the treatment of uterine fibroids. As stated in the beginning of this paper a rational discrimination is demanded of those who treat this condition. Many cases are readily relieved by vaginal or intra-uterine division of the pedicle by scissors, ecraseur or galvano-cautery wire; others are best treated by vaginal, intra-uterine or abdominal enucleation. Large oedematous tumors or fibro-cysts should be treated by laparo-hysterectomy; bleeding fibroids of not too great size, are proper cases for removal of the appendages, and most large chronic, immovable tumors, choking up the pelvis, causing pain, pressure-symptoms and hæmorrhage yield to the proper, patient employment of the galvanic current after the method of Apostoli.

18 W. Franklin St.

⁶ The Treatment of Uterine Tumors by Electricity, Edinburgh, 1890.

⁷ Introduction to American Translation of Martin on Diseases of Women. Boston, 1890. p. xxix.

TENTH INTERNATIONAL MEDICAL CONGRESS.

*Read before the Cambridge Society for Medical Improvement,
October 27, 1890.*

BY AUGUSTUS P. CLARKE, A.M., M.D.,
OF CAMBRIDGE, MASS.

Your Secretary has requested me to report what proved of interest to me during my recent trip to the Tenth International Medical Congress. In accepting this invitation I am not unaware that much has been written in regard to the Congress, but the interest manifested at Berlin in the healing art was so great, I am sure that any observation or information, though from a point somewhat remotely connected, would not be unacceptable. Before reaching Berlin I was enabled to attend as a delegate the meeting of the British Medical Association which opened on July 29, being one week earlier than usual so as not to interfere with the International meeting.

The meeting at Birmingham was instructive and full of interest, and I have no doubt was a fair exponent of the views and practice which prevail in Great Britain. There was, however, a noticeable absence from this meeting of many of the great lights of London. In striking contrast to what we in our country consider to be essential in regard to biological and bacteriological investigations, and in the study and attainment of other languages beside our own, was the studied and carefully prepared address of Mr. Lawson Tait, delivered before a large and sympathetic audience. I am confident, had his address been delivered before an audience on this side of the ocean, his trenchant but dreary periods would not have elicited such generous applause. Mr. Tait was evidently able to discern the temper of his hearers, and also to judge to what heights of ecstasy they could be carried.

The dinner of the British Medical Association, which took place on Thursday evening, was an enjoyable occasion, and was rendered more so on account of the presence of Surgeon T. H. Parke, A.M.S., who had accompanied Mr. Stanley while making his exploration of the "Dark Continent," and who had the high honor of receiving at that meeting the Association's decoration of honor (a gold medal) for distinguished merit while in service with his chief, accomplishing those great results which must ever redound to the honor and glory of England.

I did not leave the meeting until near the close of the week, but fortunately, though delayed somewhat by the trains, arrived in Berlin Sunday, August 3, the day before the opening of the Congress. The plan of registration was a simple but most excellent one. The membership cards and ladies' cards, on presentation of the proper credentials, were obtained at S.W. Leipziger strasse 75. Other cards were obtained at the Bureau in

the Landes Ausstellungs-Park railroad viaducts, 18-22. August 4 the first general meeting of the Congress took place in the Circus Rentz, an amphitheatre in many respects like a Roman Coliseum. It was a grand sight indeed, when we beheld that magnificent building, gracefully decked with the flags of all nations, and filled with so many distinguished of our profession with their ladies from all parts of the globe. The gay uniforms and decorations worn by many of the members who had gained recognition in military and Imperial service, together with the State representatives from the various Sections of the German Empire, dignified the occasion and rendered indescribably grand the formal opening of the Tenth International Medical Congress.

The meetings of the Congress were divided into eighteen Sections. The Section for which I had preference was that of Obstetrics and Gynecology. This Section was admirably managed by its accomplished President, Dr. August Martin, of Berlin. Subjects proposed by the organization of the Committee.

ANTISEPSIS IN MIDWIFERY.

Those who were especially selected for the discussion of this theme, were Galabin, London; Slawjanski, St. Petersburg; Stadfeldt, Copenhagen; and Fritsch, Breslau. The speakers favored the use of a sublimate solution for the hands of the medical attendant and of the nurses. All clothes and whatever else came in contact with the patient should be made as aseptic as possible. The methods of treatment were greatly simplified, and much of the useless ceremony heretofore carried out was dispensed with. The consensus of opinion coming from almost every country was in favor of such use of antiseptics. A mortality of 15 to nearly 20 per cent. in puerperal epidemics, which had heretofore prevailed, had been reduced by the use of antiseptics to about 1 per cent. The results of the discussion were favorable to the general adoption of the methods for private practice. Abdominal palpation instead of early resort to digital examination was touched upon, and received the approval of the participants in the discussion.

Another subject for discussion was

EXTIRPATIO UTERI VAGINALIS.

I well remember the results of the discussion on that subject which took place in the meeting of the Ninth International Medical Congress at Washington in 1887. Dr. A. Martin, of Berlin, who was at that meeting, presented a most able paper, and discussion on the importance of total extirpation of the uterus in certain stages of cancerous disease. At that meeting such operative methods were opposed by Dr. A. Reeves Jackson, of Chicago, who contended that the statistics furnished by Dr. Martin failed to show that the operation advocated by Dr. Martin and the other Ger-

man surgeons was a justifiable one. Since that date, the treatment of cancerous disease in Berlin and in other places by the surgical method in the extirpation of the uterus has been more extensively carried out. Statistics now presented are still more encouraging. Kaltenbach, of Halle, reported eighty-two cases of total extirpation with only two deaths. Reports from Russia are also more favorable for the same method of practice. The participants for the discussion were Williams, London; Schanta, Prag; Pozzi, Paris; Olshausen, Berlin; Landau and Martin, of Berlin; Sajajtzky, Moscow; Kaltenbach, Halle; Czerny, Heidelberg. The discussion brought out on

ARTIFICIAL PREMATURE LABOR, ITS INDICATIONS AND METHODS,

was highly interesting. Dr. Parvin's opening paper on the subject was a masterly one. Deformity of the pelvis proved by far to be the chief indication for resort to the induction of premature labor. Out of 988 cases collected, 870 were for deformity of the pelvis. The other occasional indications for the resort to the operation are uncontrollable vomiting of pregnancy, cardiac disease, eclampsia, certain diseases of the lungs and brain. The choice in the methods evoked by the discussion was in the use of the soft or flexible bougie previously made aseptic, the employment of hydrostatic dilators for the uterine cervix, and hot water douches. On the choice in the operation for premature delivery and that of Cæsarean section the discussion continued at some length. The result, however, showed that each method of delivery has under certain peculiar conditions its own appropriateness. The Cæsarean section, when undertaken with all the more recent precautions, proved the more hazardous alike to the mother and the child.

In the discussion of the subject in

MYOMATA,

the appearance of Apostoli before the Section was regarded with much interest. It appears that in many cases in which there is profuse uterine hæmorrhage at irregular periods, Apostoli has resort to electrolysis instead of the curette and other strictly surgical measures. He instituted, as he had done in his previous publications, many precautions for the employment in cases of peri-uterine inflammation. Our associate, Dr. E. Cutter, appeared as the originator of electrolysis in uterine myomata. He evidently desired a share of the glory for the discovery. He certainly is deserving of much praise for his perseverance in his early work, considering the prejudice and the obstacles he had to overcome.

Four hundred and fifty members registered in this Section. One hundred and fifty papers were read, beside the discussions on them. Fifteen meetings were held. For members to avail themselves of the opportunities offered it will ap-

pear that they had at all times to be on the alert, especially when it is remembered that there were three general meetings in the Circus Rentz; five grand balls given; a social meeting in the Austellings Park N. W. for the members of the Congress and their ladies; the reception at the Rathhaus; the abschiedsfest (farewell parting) in the Königsplatz (Kroll's Garden) also given to the members and their ladies by the physicians of Berlin; the Court reception; the dinners of the several Sections; visits to the many hospitals, besides attendance on private entertainments, scientific and social, all of which had to be accomplished in six days.

Though I registered as member of the Section of Obstetrics and Gynecology, I was able to attend several of the meetings in other Sections, especially in that of Surgery. The boldness and brilliancy of Oppenheim's achievements will be appreciated when it is known that a patient from whom he had removed successfully a sarcoma of the brain some three months before, had within a short time given birth to a healthy and well developed child.

I visited Professor Glück's Policlinik in Zeiglestrasse, where I saw in use the articulated ivory pegs about which so much has been told. These were used in cases of excision of the knee and other important joints. The pegs were introduced into and along the medulla of both bones so as to give support and motion to the joint.

The dinner at the Central Hotel, given by the Surgical Section, was a most enjoyable occasion. There were some seven hundred invitations. It was presided over by von Bergmann, Court Surgeon, who had charge of the late Emperor during his last illness. At the President's table sat some of the most renowned surgeons of the world. Among the number were Prince Carl Ludwig, Sir James Paget, Sir Joseph Lister, Sir William MacCormac, von Esmarch and Billroth. At the President's table I am happy to be able to bear witness that our own countryman, Dr. Billings, of Washington, also had a seat of honor.

In the Section of Neurology and Psychiatry, Victor Horsley, of London, was the fortunate recipient of the highest honor. Erb maintained that our knowledge of localization of lesions of the brain is as yet quite imperfect, that trephining had been done for a supposed lesion which had not existed, that in cases of thrombi ligature of the carotids cannot be of service in arresting cerebral hæmorrhage. He deprecated the frequent resort to surgical measures. Notwithstanding all he had to say, it was apparent that the number of advocates for surgery of the brain was far in the ascendancy.

In the Section of Obstetrics and Gynecology Prof. Barbour, of Edinburgh, presented a paper upon "Frozen Sections from the Eighth Month of Pregnancy, the First and Second Stages of

Labor and immediately after Delivery." At Birmingham I had the good fortune to make that author's acquaintance and to hear him give before the British Medical Association the results of his long and careful investigation.

Time would fail me to give the briefest mention of the leading points of the other most important papers presented. I would state, however, that the American representatives were everywhere well received; that respectful attention was given to the reading and discussion of their papers. The respect for Americans was well shown by a hearty applause, even on the first day, when it was announced before the General Session that 630 representatives from the United States had registered. This was the largest number from any country except Germany herself.

After the close of the Congress, accompanied by my wife and two daughters, I resumed my travels through the great centres for medical education, observation and training through other parts of Germany, through Austria, Italy, Switzerland, France, Belgium and Holland. I found that Rome in the early part of September was most delightful, the city was well governed. During our stay in Rome there was scarcely any rain, the weather was not uncomfortably warm. I was reliably informed that very little sickness prevails there at that time. I cannot regret the time required and expenses incurred incident to my attendance on the Congress. I already look forward with much pleasure to the meeting of the next Congress, which is to take place in Rome in October, 1893. I have full confidence that Bacelli will not prove an unworthy successor to the renowned Virchow, should the mantle of the high office fall upon him. However that may be, my great desire shall be to be counted among the representatives worthy and able to attend the next Congress in the Eternal City.

THE TONSILS AS PATHOLOGICAL PRODUCTS.

Read by Title at the Annual Meeting of the Mississippi Valley Medical Society.

BY GREEN V. WOOLEN, M.D.,

PROFESSOR OF RHINOLOGY AND LARYNGOLOGY, CENTRAL COLLEGE PHYSICIANS AND SURGEONS, AND LARYNGOLOGIST IN THE CITY HOSPITAL, INDIANAPOLIS, IND.

It doubtless has been observed by others engaged in throat work that but few people, old or young, have tonsils. It doubtless has been observed further, that when seen, they have always been associated with present or preëxisting catarrhal disease of the naso-pharynx.

It, therefore, soon became a question with the writer, if they were a true anatomical structure and organ, or a pathological product. As is well known, they are described by anatomical writers

as the former, but with no fixed idea as to size and character of function. Gray probably gives a more correct description than his predecessors, and says: "The tonsils are two glandular organs situated on each side of the fauces, between the anterior and posterior pillars of the soft palate. They are of a rounded form, and vary considerably in size in different individuals. . . . Their inner surfaces present from twelve to fifteen orifices leading into small recesses, from which numerous follicles branch out into the substance of the glands. These follicles are lined by a continuation of the mucous membrane of the pharynx, covered with epithelium, their walls being formed by a layer of closed capsules imbedded in the submucous tissue. These capsules are analogous to those of Peyer's glands. They contain a thick, grayish secretion."

But this description, it would seem, embraces tonsils which "vary considerably in size in different individuals." Now, this cannot occur except by hypertrophy or hyperplasia. We do not find this variation in size in Peyer's glands, except in disease. They both are an aggregation of solitary lymphoid glands. The mechanism of deglutition demands some such aid in the fauces, that the muscles comprising the pillars of the fauces may freely act, and the bolus to be swallowed may be coated, so as to be bolted without friction.

The difficulty has originated in describing diseased for healthy tonsils. The size of any tonsil, however large, and not inflamed or increased by the growth of a new formation, is due to the enlargement and distension of the glandular structures, or hypertrophy of the stroma—usually more or less of both—and it is invariably caused, as I believe, by chronic inflammation from former or existing catarrhal disease of contiguous parts; simply an undue increase of normal elements—hypernutrition and consequent perversion of function.

It is not difficult, in those persons who have no tonsils, to spread the faucial pillars apart and, inserting a probe into these follicles, to raise separately each gland, which is loosely attached to its associates. Any attempt to assign enlargement to different genetic sources, seems unnecessary, since hyperæmia and consequent hypernutrition from preëxisting catarrhal disease, can easily be traced. The drainage of the naso-pharynx, so admirably described by Leffert, shows how easily the unhealthy discharges from above must necessarily deposit a sufficient source of irritation in the follicles and folds of the normal mucous membrane in this region, to awaken the diseased processes.

Barring such explanations, however, the fact remains, that in healthy fauces nothing but a loose aggregation of from twelve to fifteen solitary glands, forming spongy tufts of mucous membrane, exist between the pillars of the fauces. If

the proposition is made that want of development or atrophy has occurred, then we must conclude that nature has made a great mistake, as the larger portion of mankind are thus constructed, at least in the earlier and later stages of life. But one who is closely observant will not fail to see that it is such cases that furnish the peculiar glairy mucus that is so helpful in deglutition and phonation, and that in the hypertrophic form of enlargement, the follicles or crypts are often filled with degenerated cheesy secretions, and accompanied with a granular pharynx, while in the hyperplastic condition, the follicles are closed and no secretion is furnished at all; that these enlargements become hurtful from mechanical disturbances of deglutition, respiration and phonation; that these enlarged follicles (crypts) become the frequent seat of disease, in which diphtheria and scarlatina are conspicuous; that submaxillary and cervical glandular disease is often a result of this local infection, with, as I believe, much constitutional sepsis, often regarded incorrectly as of malarial, scorbutic or scrofulous origin. And, furthermore, that the greater number of those who do have tonsils, lose them by atrophy on arrival at mature life, and are then without their aid, if they are normal organs and have functions.

This being the case, that tonsils are always a pathological product, we are brought to the practical part of the subject, What shall be done with them? It would seem that the long-established operation for removal was legitimate. But the cry against it is like Banquo's ghost. Such excrescences elsewhere producing such direful results, would unquestionably receive surgical attention. Why this want of agreement as to the tonsils? We answer because,

1. There is a general belief that an organ is being destroyed, and with it, some useful function such as virility, voice production, an aid in hæmatosis, etc. But, if the contention of this paper is correct, the tonsil is not an organ, and the function of the glands involved in the pathological process is already destroyed.

2. It is claimed they, the tonsils, will be reproduced and the operation will need to be repeated. This is partially true as it has been heretofore performed. The very name "tonsil" conveys an incorrect idea, *i. e.*, meaning something to be clipped. Nothing should be left through fear, conservatism, or the impression that the remnant left will subsequently atrophy. Often the crypts are laid bare even more freely than before, so that infection is more possible; and the broad base will also keep the pillars apart, and thus interfere with faucial action, much as before—especially phonation—which result will ever after be used by many as an argument that the operation produced it.

3. Medication is still advocated with a hope of shrinking, and otherwise aiding in alleviating the

distress incident to the enlargement. This is so tedious and unsatisfactory that, except in acute affections, it is fast falling into deserved disrepute by those of largest experience, and needs only to be mentioned to be condemned.

4. Fear of hæmorrhage deters many who would otherwise remove these excrescences. It is doubtless safe to say that no other operation in surgery, so often made, has been attended with less serious trouble in this respect. In a somewhat extensive practice in this line, based upon a belief in the doctrines herein advocated, the writer has never had but two unpleasant results—one from bleeding of a vessel at the lower border of the cut, the blood escaping into the stomach unobserved, until syncope and vomiting called attention to it; the other from injudicious use of stimulants, bringing on the trouble the third day after removal of the tonsil. In fact, the loss of blood to a considerable degree, in conjunction with the operation, is helpful in relieving the engorged contiguous tissues, and thus expediting the cure of the associated pharyngitis. Ablation then would probably be a better term than excision, as describing the proper operation, and never that of clipping.

Mathieus' tonsillotome is perfectly adapted to accomplish this, provided the barbs are removed from the fork, which facilitates puncture of the mass without displacement, and thus allows removal of the exact amount desired. With Elsborg's applicator for pressure, and application of Mackenzie's tano-gallic acid paste, no one need fear in controlling any hæmorrhage which may occur, unless a large blood-vessel should be cut because of abnormal distribution. This, however, is practically impossible if the proper instrument is skilfully used. The fork should always be adjusted for each individual case, so as to retract, after puncture, sufficiently to raise the tonsil enough for its removal, without drawing in the contiguous parts. This is to be done by carefully estimating the size of the tonsil prior to application of the instrument. The pharyngeal fascia, as is known, separates the mass from the superior constrictor muscle and adjacent blood-vessels, and if this care is exercised, the tonsil will generally be removed as if peeled off from it, so that one may introduce a probe into the crypts of the tonsil without its passing through. When removed in this manner, it has seemed to the writer, less hæmorrhage has occurred than when a part has been left. If, by any misfortune, any part of the tonsil has been left, or because of follicular disease and insufficient size for removal with the tonsillotome, then the vulsellum and curved scissors should be used, and the diseased parts removed. The writer has three tonsillotomes of graded sizes, which usually meet all requirements.

A practice based upon these ideas has given the writer as much satisfaction as any operation known to other departments of laryngology. And espe-

cially so, if preceded, as it should always be, by prior eradication of the ever antedating nasopharyngeal disease, which, as indicated above, I regard as the primary cause of this form of hypertrophic disease, as it is well known to be of the other forms of hypertrophic disease of the nose and naso-pharynx.

ANTIPYRIN IN THE TREATMENT OF PULMONARY CONSUMPTION.

BY THOMAS J. MAYS, M.D.,

PROFESSOR OF DISEASES OF THE CHEST IN THE PHILADELPHIA POLYCLINIC, AND COLLEGE FOR GRADUATES IN MEDICINE.

Antipyrin is probably one of the most useful drugs in our materia medica. I do not refer so much to its antipyretic action as I do to its influence as a general tonic in the adynamic stage of pulmonary consumption. It is indeed valuable in every stage of this disease, but it seems to give better results in the final stage than in any other. Of course it must not be regarded as a panacea, but whenever its beneficial action becomes manifest it gives rise to wonderful results. My attention was first called to its usefulness in this disease by a paper from the pen of Dr. J. Holland, of St. Moritz, Switzerland, which was published in the *London Practitioner* (Vol. xxxiv, p. 321). His results were so striking that I beg to abstract one of the cases which he relates.

In July, 1884, he was consulted by a lady who was in advanced consumption, and who had that morning spat up some blood. She had a cavity in the left apex with extensive softening all around it, together with softening in the other apex. She had a troublesome cough and considerable expectoration, and her evening temperature was as high as 103° F. He advised total rest in bed and small doses of morphia and digitalis, and on the following day her temperature was 101.4° in the morning, and 103° in the evening. He now prescribed 15 grs. of sodium salicylate every three hours, and the next evening her temperature was 103.6°, and her cough was more troublesome. He administered 20 grs. of antipyrin every three hours until she had taken a drachm. She was less feverish and felt better one hour after taking the first dose. She slept well, her cough improved, she began to eat better, and altogether felt more comfortable than she had done for weeks. The next evening her temperature was 100.4°. She took the antipyrin two or three times a day, and on the sixth day her temperature was normal. In a month from the time he first saw her she had gained 3 lbs., and only coughed and expectorated in the mornings. The physical signs had improved in proportion, for the softening in the right apex had cleared up, and had conspicuously diminished around the cavity in the left side; the cavity itself showed signs of healing, and freer

breathing was heard all over the left lung. The following winter she spent at St. Moritz, gained 15 lbs., temperature nearly normal since the previous August; became able to walk ten miles with very little fatigue, her appetite and digestion remaining excellent.

In the *Medical and Surgical Reporter* for August 11, 1888, I detailed several cases which were treated with antipyrin, and in some of which I think the results were probably as striking as in Dr. Holland's case; and regarding this drug as an indispensable adjuvant in the treatment of phthisis, I have since then found abundant evidence to confirm the favorable impression which I gathered from my earlier experience with it. To demonstrate this I will abstract a few cases from my note book, which are not specially selected for this purpose. About four months ago I was called in consultation to see a young lady living some distance from the city, who was found to be suffering from the last stage of phthisis. She had a large cavity in one lung, and another one forming in the other, she had a constant cough, a copious expectoration, hæmoptysis, a high temperature, a very rapid pulse, extreme emaciation, no appetite, coated tongue, a dropsical effusion of the lower extremities, and so much exhaustion that she was scarcely able to move. We agreed to give her 7½ grs. of antipyrin every three hours and nothing else of importance. I heard nothing from the attending physician for three weeks, when he wrote that a remarkable change had come over the patient. The œdema had not improved, but she had lost her cough almost entirely, expectorated very much less, her appetite had improved, she gained in strength, and was able to walk about. The fever had also subsided, and the chief complaint she had then was a cutaneous eruption brought out by the antipyrin. While permanent results were out of the question in this case I am quite certain, from what I have seen in other instances, that the amelioration in her condition was due to the antipyrin.

Another case is that of a young man aged 24, who consulted me last April. He had been ailing for some time, coughed, expectorated, lost flesh, had hæmoptysis, and no appetite. His temperature at that time was 102° in the evening. There was found a cavity in his right lung, and crepitation in the opposite one. He was placed on antipyrin—15 grs. two or three times a day, and kept quiet for some time. After the temperature approached the normal point the drug was given in 7½ gr. doses three or four times a day, and was alternated with 4 grs. of phenacetin every four hours, every other week. He now weighs 10 lbs. heavier than he did, has a good appetite, and his cough and expectoration have almost disappeared.

The third and last case which I shall relate is that of a young man, aged 20, who was first seen about two years ago. He had lost his mother,

father and sister on account of phthisis, and he himself was suffering from the third stage of the same disease. In a short time after taking the antipyrin he began to mend in symptoms and in physical signs. The cavity in his left lung became more quiet, his cough, expectoration and appetite improved, and in the course of two months he gained 9 lbs., and continues well up to the present time.

While it is true that antipyrin is given for the purpose of subduing the fever of phthisis, we must not lose sight of the fact that it has a capital influence on this disease after the fever has subsided. Phthisis is undoubtedly a constitutional and not a local disease, depending ultimately on a depreciated nervous system,¹ and it is in virtue of its selective affinity for the nervous system, that antipyrin acts as an antipyretic and, associated with other well directed treatment, it yields the beneficial therapeutic influence in this as well as in all other nervous diseases. It should therefore be continued in smaller doses after the fever has gone. In conclusion it must be added, that if it is given for a protracted period it produces a rash of the skin, which can, however, be obviated by alternating it with phenacetin.

MEDICAL PROGRESS.

A NEW METHOD OF PERCUSSION.—Dr. KABIERSKE, of Breslau, who fully recognizes the value of mediate percussion (by means of the plessimeter), has been studying the matter of immediate percussion, because it seems to him easier and more convenient, with a view to avoiding the numerous difficulties which attend the present method (*Ther. Monatsh.—Med. Chir. Rund.*). For this purpose he has devised an instrument similar to a tuning-fork, with the handle cylindrical and covered with rubber, and the blades rounded off at the ends. The handle of the instrument is held between the forefinger and thumb, and raised and lowered by them without moving the hand. Percussion is thus rendered easier of performance, because only one hand is required; the results are said to be more accurate, since among other advantages, much smaller surfaces can be examined at a time, the thickness of the blades being but 7 mm. (about $\frac{1}{4}$ in.); thus this might almost be called punctate percussion. The author has preferred his percussor above all other means in examining the apices of the lungs, assuming (perhaps not with justice), that no investigations into the movability of this portion of the lungs have yet been made. At any rate it is worthy of notice, that Kabierske can, with this

instrument and after sufficient practice, easily detect apical dulness which would be sought for in vain with ordinary methods of percussion. A further advantage of the instrument is that it will serve as an aid to the sense of touch, especially in percussing out the heart, the area of which the author was able to outline in a way different from that previously employed. By laying the handle flat on the surface, the instrument makes a good plessimeter, especially in abdominal percussion, and has more than ordinary value in the percussion of small areas, since it covers less service than the implements heretofore in use, and the sound it gives is loud and clear. Its weight is 15 grams ($\frac{1}{2}$ ounce). Although the sound given out by this instrument when used as a plessimeter is less than that made by the ordinary plessimeter, it is still loud enough for all purposes.—*Weekly Medical Review.*

PERNICIOUS ANÆMIA IN CHILDHOOD.—A paper on pernicious anæmia in childhood, contributed by Drs. AD. D'ESPINE and C. PICOT, of Geneva, to the Section of Pædiatrics of the International Medical Congress (1890), is published in the *Revue de Médecine* for October 10. Each author contributes one case, and they give brief notes of four others, which are all they have been able to find recorded in the literature of the subject. In both the cases now published for the first time the course of the malady was very brief; in neither case did the symptoms endure more than about one month. Dr. D'Espine's patient was about 2 years, Dr. Picot's 13; both were healthy children in whom marked anæmia rapidly developed without any discoverable cause; the possibility of the presence of *bothriocephalus latus* was not overlooked, but the exhibition of male fern was not followed by the expulsion of a worm. In the younger child there was at an early stage some gastric disturbance, and the administration of castor oil led to vomiting, but no diarrhœa; in the elder child, on the other hand, there were at an early stage attacks of colic and diarrhœa, and one or two attacks of vomiting; both suffered from loss of appetite and continual thirst; both presented purpuric patches, and the younger petechiæ also; the gums in both were healthy; epistaxis occurred in both, but was severe only in the elder and towards the termination of his illness; the blood in both was pale and did not coagulate properly. In both there was a firm œdema of the lower extremities, and in the younger an anæmic cardiac murmur, and towards the end a *bruit de galop*. Dyspnœa was present in both, and in the elder child was very severe; in fact, the most prominent symptom. In the younger child there were two slight accesses of fever ten days and a week before death, and for the last four days moderate remittent fever; in the elder there was no fever. A necropsy was

¹ "Pulmonary Consumption a Neurosis," by Thomas J. Mays, M.D., *Therapeutic Gazette*, November and December, 1888; see also *Medical News*, May 25, 1889; *Journal of Inebriety*, April, 1889; and *Medical Times and Register*, August 10, 1889.

obtained in Dr. Picot's case. The abnormalities noticed were: liver large, firm, pale yellow, and of fatty appearance, gall bladder empty; spleen nearly twice the normal size, soft and congested; the stomach was healthy, with the exception of two or three vascular points; the duodenum, jejunum, and ileum were healthy to within four or five inches of the ileo-cæcal valve; below that point the intestine was thickened, as were also the cæcum and the appendix vermiformis; there was no ulceration, and no swelling of Peyer's patches; on section the intestine had a greyish lardaceous aspect; the corresponding mesenteric glands were enlarged; the rest of the large intestine was healthy. Dr. Mayor made a microscopical examination; he found all the coats of the intestine except the serous copiously infiltrated with leucocytes; these leucocytes were not contained in the reticulum, and Dr. Mayor concludes that the lesion was not lymphadenoma. The thymus gland was persistent in this boy, large, heavy, and lobulated. In the younger child iron and arsenic was exhibited without any benefit, and quinine had little or no effect on the fever. The authors discuss the etiology of the disease, which they attribute to "an auto-intoxication of gastro-intestinal origin," but are apparently unacquainted with the more recent work (see *British Medical Journal*, July 5 and 12, 1890) of Dr. William Hunter, from whose earlier work they quote. They discuss the rarity of pernicious anæmia in childhood, and venture on a hypothesis connecting these fatal cases with other cases of severe anæmia in childhood not due to diarrhœa, or imperfect feeding, cases in which there is anæmia without wasting associated, as they believe, with abnormal fermentations in the stomach or intestines, and often primarily dependent on the dilation on the stomach produced by overfeeding. Their hypothesis is that these cases really belong to the same category as the pernicious anæmia of adults, and that the reason why the anæmia so rarely becomes truly pernicious is that the hæmatopoietic activity, of the bone marrow especially, is so much greater and more intense in infancy and early childhood than during adult age.—*Brit. Med. Journal*.

EFFECTS OF REMEDIES UPON THE SYSTEMIC AND PULMONARY CIRCULATION.—The Harveian oration of DR. JAMES ANDREWS, of St. Bartholomew, delivered at the Royal College of Physicians and Surgeons, London, Oct. 18, 1890, and reported in *The Lancet* of Oct. 25, is worthy of a critical reading. We quote from his oration that portion which treats in particular of the effects of remedies upon the two circulations.

Through the kindness of Dr. Bradford of University College Hospital, and of Dr. Bokenham, assistant to my colleague, Dr. Lauder Brunton, in the science work-room of St. Bartholomew's Hos-

pital, I am enabled to lay before you the following statements as to the comparative effect of certain substances upon the systemic and pulmonary circulations. Their researches were carried on entirely independently of each other, and yet their results are practically identical. In looking at the pressure tracings taken by them one cannot but be struck by the smallness of the variations in the pulmonary, as compared with those in the carotid, artery; but it must be remembered that in consequence of the lower natural pressure in the pulmonary artery alterations in pressure in either direction produce about twice the effect upon the rapidity of the lesser circulation which corresponding changes do upon the greater.

Muscarin.—In the *British Medical Journal* for Nov. 14, 1874, Dr. Lauder Brunton gives the following account of the action of muscarin on the heart. Having thoroughly narcotised a rabbit with hydrate of chloral he commenced artificial respiration, and opened the thorax. Both sides of the heart seemed to be equally filled, the veins only moderately distended, and the lungs rosy. On injecting a little muscarin into the jugular vein everything at once changed. The lungs became blanched, the left side of the heart became small, the right side swelled up, and the vena cava became greatly distended. After a short time a little atropine was injected into the jugular vein, and everything instantly returned to its normal condition. The left side of the heart regained its former size, the right side diminished, the distension of the veins disappeared, and the blanched lungs again assumed a rosy hue. Distrusting his own personal observation Dr. Brunton got two observers who knew nothing about the experiment, and reported it before them, noting down their observations, which agreed exactly with his own. It is all but impossible, I think, either to doubt the accuracy of the record of this experiment, or to attribute the phenomena observed (especially the simultaneous distention of the pulmonary artery and the blanching of the lungs) to any other cause than the action of vaso-motor nerves. Subsequent observers seem to have failed to obtain the striking effects witnessed by Dr. Lauder Brunton, but his account is substantially confirmed by Dr. Bokenham, who tells me that muscarin in a small dose caused rapid fall in the carotid pressure, with, in most cases, a rise in the pulmonary pressure. This rise, however, is not long maintained. The pressure in the pulmonary artery sinks to normal, whilst that in the carotid more slowly rises to its original level. A large dose seems to produce paralysis of the heart and rapid fall of pressure in both circuits.

Amyl nitrite.—This given by inhalation, caused rapid fall in carotid pressure, with simultaneous marked rise in pulmonary pressure. Carotid pressure then rose, and during this rise the pulmonary pressure resumed its original level.

Nitro-glycerine.—In the cat one-fiftieth of a grain produced a temporary great fall of the carotid, with a slight rise of the pulmonary pressure. When, however, the carotid fall had reached its lowest point, the pulmonary pressure also fell. The carotid pressure then rose, but not to the normal figure. At the beginning of this rise the pulmonary pressure showed some tendency to fall, but remained nearly constant. In the dog one-fiftieth of a grain produced a primary fall in the carotid, with little or no effect in the pulmonary pressure. A subsequent gradual rise of the carotid pressure then took place, with a very slight fall of pulmonary pressure during the greater part of the rise.

Digitalis.—Digitalin caused steady rise of blood pressure both in carotid and pulmonary arteries, with great slowing of pulse. Tincture of digitalis in dogs caused slight fall in carotid pressure, following soon after injection. At this time practically no effect on pulmonary pressure. Following this a steady rise in both pulmonary and carotid blood pressure. Infusion of digitalis in cats caused primary rise in blood pressure, both in carotid and pulmonary arteries, followed by slight but more permanent rise. (The primary rise here was probably due to the fact that a large quantity of fluid had to be introduced, as the same result followed the injection of a similar quantity of water).

Tincture of strophanthus.—In cats a small dose (min. j to ij) produced a primary fall of pressure in both carotid and pulmonary arteries, and a subsequent rise in pressure almost up to normal. The heart at the same time was slow and irregular. A large dose produced first a great rise of carotid pressure, the pulmonary pressure sinking slightly at first and then rising slightly. Then great quickening of heart with steady fall of pressure in carotid, the pulmonary falling to, but not below, its original level.

Ergot produces primary rise in pulmonary, with simultaneous fall in carotid pressure. This fall, however, is of short duration; subsequently both pressures rise.

Aconite.—This produces a fall in pressure in both carotid and pulmonary arteries.

Strychnine.—This produces in both carotid and pulmonary arteries, a rise in pressure, especially marked in the pulmonary artery.

Chloroform.—Both pressures fall together.

Ether.—Both pressures rise together.

Atropine (sulphate of) produces first a steady fall in carotid pressure, the pulmonary sinking at the same time, but in much less degree. During this period the heart is slowed and the vagus nerve is excitable. Next pressure rises in both, and the pulse becomes more frequent, the inhibitory power of the vagus being gradually abolished. When the pressure reaches its highest point the heart cannot be stopped by stimulation

of the vagus, and a second dose of atropine will have no further effect.

Quebracho (tincture of) produces in the carotid artery a primary fall, in the pulmonary artery a slight rise, followed in the carotid by a steady rise to a higher point than normal, whilst in the pulmonary artery the higher level already reached is maintained. Finally, in the carotid artery the pressure becomes very great, whilst in the pulmonary it does not rise above the slightly higher level it reached at first.

In the graphic records of these experiments there are many things of great interest, but from lack of time I have confined myself to one point only—viz., the pressure relations of the two circuits to each other. And it is clear that in some cases these relations, under the influence of the same drug, vary in a manner which could scarcely have been ascertained without the aid of direct experiment. It is difficult to arrive at any classification of them beyond this: that if the systemic pressure rises, then the pulmonary pressure also rises; if the systemic pressure falls, then the pulmonary may either rise or fall. And even this is only true of the primary effect of the drug, for among the later effects, for example, in the case of amyl nitrite, and to a less extent in that of nitro-glycerine, the pressure in the pulmonary artery may fall whilst that in the carotid is rising.

LAPAROTOMY UNDER COCAINE.—A woman, æt. 40, was admitted as an in-patient under Dr. Barnes, physician to the Cumberland Infirmary, on July 7. She had for some years suffered from a tumor in the right side of the abdomen. After consultation with Dr. Maclaren, surgeon to the hospital, she was advised to submit to an exploratory incision. While she was considering this she rather suddenly became worse. Her abdomen became distended and very tender; she vomited frequently; her loss of strength increased day by day. On October 4, her urgent state was fully explained to her, and she agreed to take such chance of relief as an exploration might afford. Her condition seemed so extreme that she might not recover from a general anæsthetic, so Dr. Maclaren proposed to try if the operation could be done with cocaine. A 20 per cent. solution was used, and of this 12 minims were injected. Two punctures were made, and the solution injected drop by drop along a line of 2 inches, just under the skin, except for the last two drops, which were injected into the deeper tissues. Five minutes were allowed to elapse, and an incision was then made two inches above and parallel to Poupart's ligament. There was no difficulty in doing the operation; the patient never moved. The peritoneum was studded with malignant nodules; a mass of malignant tissue (omentum) adhered to the abdominal wall. The bowel was not distended, and it was evident that

nothing could be done, so the wound was sewn up. The patient died four days after, the course of her illness being uninfluenced for good or evil by the operation. What the patient felt during the operation was very trifling. When questioned she said that it was nothing compared to her sufferings during the previous few days, that it was not greater than she had suffered in her confinements, which had been easy ones, and that what she felt most was the stitching. The introduction of the finger and the passage of a glass tube in various directions to allow fluid to escape were quite painless. At Dr. Maclaren's request she turned herself on her side to allow the fluid to gravitate to the opening, and afterwards said she felt it running out, and thought it was blood. She was a very thin woman, which no doubt made the use of the cocaine more efficacious and the operation easy. Post-mortem examination showed much malignant disease of the peritoneum and omentum, and a distended gall-bladder containing numerous stones, one impacted in the duct. The condition of the wound was perfect.—*British Medical Journal*.

MICROBES IN THE STOMACH.—DR. KIANOVSKI details in the last two numbers of the *Vratch* some observations he has recently made upon the bacteria contained in the stomach before and during digestion, with the object of determining the effect of the gastric juice upon them. He found that the fasting stomach of a healthy person always contains a large number of microbes, and that in the earlier part of digestion the number of these bodies is also considerable, and that it depends mainly on the number introduced by the food, saliva, etc. Notwithstanding this, the gastric juice, or rather perhaps the free hydrochloric acid in it, tends to exert a decidedly destructive influence upon the microbes. No effect appears to be produced upon the process of digestion by these bodies.—*The Lancet*.

THE CONNECTION BETWEEN DISORDERS OF THE GENITAL SYSTEM AND SKIN DISEASES.—This has been accepted in the case of acne, of acute circumscribed cutaneous oedema, and sometimes in eczema, but scarcely ever has the association been more fully worked out than in the example of chronic urticaria by DR. FRANK, of Prague. In a woman aged 28, unmarried, urticaria and disorders of the sexual system commenced simultaneously at the age of 25. The symptoms pointed to chronic cōphoritis and salpingitis, and the urticaria burst out with greatest intensity at the menstrual periods. The ovaries were completely removed, and the patient made an excellent recovery. The urticaria at once ceased and did not recur. She gained flesh, and all the local symptoms referable to the sexual apparatus vanished. Dr. Frank observes: "It is a

known fact that during female sexual life the normal genital functions, as well as the disturbances to which these are liable, exert a notable influence on the development and on the condition on the entire nervous system. As a result of long-continued chronic sexual disorders, from the persistent pain and emaciation, an altered irritability of the nerves, particularly of those distributed to the vessels, arises. Further, from the circumstance that a reciprocity between the genital system and the skin is easily observed in various physiological and pathological processes, the conclusion is established, that the cutaneous nerves are implicated in these disorders."—*Zeitschrift für Heilkunde*.

PERIODICAL HÆMOPHTYSIS AFTER REMOVAL OF BOTH OVARIES.—DR. PAUL RAYMOND (*Gazette des Hôpitaux*, October 14, 1890, p. 1096), describes a case in which M. Pozzi had, in 1888, removed both ovaries from a woman, then aged 25. The patient remained three months in hospital, and no uterine "show" has ever been seen since. Every month, however, a flow of white fluid appears and lasts for two or three days. The patient suffers from headache, without lumbar or abdominal pains, and suddenly vertigo and flushing of the cheeks come on; these symptoms are followed by hæmoptysis. The spitting of blood is not preceded by any feeling of heat or weight in the chest. Nausea without hæmatemesis sometimes complicates this abnormal menstrual period. The hæmoptysis occurs four or five times daily, and lasts two or three days, sometimes waking up the patient at night. Several ounces of blood are thus lost without sensible detriment to health. The pulmonary hæmorrhage has continued monthly since January, 1889. There is evidence of incipient phthisis at the right apex. This case, says Dr. Raymond, shows that when the sanguineous "show" ceases after castration, the congestive tendency and other phenomena of menstruation may continue. Vicarious hæmorrhage may occur, and it is easy to understand how a new tuberculous deposit is liable under these circumstances to become the seat of bleeding. The author refers to a case of Graves' disease following removal of the ovaries, reported by Dr. Mathieu in the same journal (1890, p. 643). Uterine hæmorrhage was never seen after the operation, but the patient became subject to the most distressing flushings of the face and great nervous agitation. The thyroid gland swells; in fact, the patient is in the incipient stage of Graves' disease, though the symptoms seem to have become "disciplined," so as to be marked only at the monthly period. These cases show that a patient after removal of her ovaries is in the state of a woman with amenorrhœa. True menstruation ceases, but the menstrual period may remain, reacting on the

whole organism and manifesting itself by hæmorrhagic, vasomotor, nervous, or other symptoms, which by their regular recurrence alone may entail serious consequences.—*Brit. Med. Journal*.

A REMEDY FOR PALPITATION.—DR. GINGEOT (*Rev. Gen. et Clin. et de Ther.*), recommends as a valuable remedy for palpitation—one that has proved serviceable to him—the application of cold to the precordial region. Attention must be paid to the method of applying cold. The simplest plan of all is to apply a wet sponge over the heart in the morning before dressing. At night, when in bed, the patient or an assistant may put a cold compress over the heart, well covered with dry bandages, to retain moisture and prevent any wetting of the clothing. When this compress is warm, the patient may remove it, and will probably fall asleep. There are objections to the ice-bag, one being the condensation of insensible perspiration upon the surface of the skin. The ether-spray is a simple and convenient method of refrigeration. With proper instruction as to necessary precautions in the use of ether, the patient can apply cold in this way at any hour of the day or night. Palpitation of purely nervous origin seldom fails to be greatly benefited by the application of cold; and a certain success often follows its use in cases of palpitation due to organic disease. Equalizing the heart's action will often prevent an increase in its size. It is also useful in aneurism and passive dilatation.—*Therapeutic Analyst*.

THE SURGICAL TREATMENT OF TUBERCULAR PERITONITIS.—The surprising and inexplicable success which has attended the opening of the peritoneal cavity for the treatment of tubercular peritonitis, is the subject of an editorial in the *University Medical Magazine* for November. Evidence has been accumulating till it is now convincing, that even an exploratory incision is frequently followed by permanent cure of the local tubercular processes.

KÖNIG (*Centralblatt für Chirurgie*, No. 35, 1890) has collected 131 cases of peritoneal tuberculosis treated by abdominal section, of which 23 were greatly improved; 84 were cured (65 per cent.); of these cases 30 (24 per cent.) exhibited no signs of intra-peritoneal tuberculosis for several years following abdominal section. In only 3 per cent. could death be attributed to the operation. As to the method by which these cures were obtained, examination of the cases shows that there was only one condition common to all; that is, the belly was freely opened, and a certain amount of intra-peritoneal manipulation was practiced. Even the employment of anti-bacterial agents seems to be absolutely without influence, except that apparently a greater percentage of cures followed where no disinfectants were used

A question of major importance is as to whether only certain forms of peritoneal tuberculosis can be cured by section. As is well known, the effusion may be serous, sero-fibrinous or purulent; may be circumscribed or diffuse. The tubercles may vary in size, being miliary in one case, in another as large as a hazel-nut. The peritoneum may be smooth, roughened, thickened, or covered with a pseudo-membrane. In so far as clinical studies go, it would seem that all these different forms have undergone resolution after abdominal section, and consequently that they are all curable.

Peritoneal tuberculosis is dependent upon the extension of the tubercular inflammation from adjacent organs, or upon direct infection, by means of the bacilli circulating in the blood. Phillips found the lungs involved in 92 per cent. of the cases, the pleura also in 56, and the bowel in 75. Intestinal invasion by tubercle is frequent, the serosa becoming quickly involved, but this involvement may remain strictly localized, and may undergo spontaneous resolution if the original source of infection, the intestinal lesion, cicatrizes. When, however, the peritoneal involvement comes from a large organ, and is extensive, it is as difficult to conceive the *rationale* of spontaneous resolution as it is to explain in what way operative procedure, except that of total ablation of the disease, can possibly be of the slightest avail. Yet the fact remains that a gratifying percentage of success follows simple opening and intra-abdominal manipulation in cases of tubercular peritonitis.—*Boston Med. and Surg. Journal*.

MANAGEMENT OF GONORRHOEA.—LANG (*Wiener Med. Wochenschrift*, October 2, 1890) discusses some of the causes of the prolongation and complications of gonorrhœa. One of the most important points in the treatment of gonorrhœa is, he thinks, the proper regulation of eating and drinking. In some cases attention to these is all the treatment that is necessary. The injection chiefly used by the author is a solution of sulphocarbolate of zinc of a strength of from one-fourth to one per cent. Stronger solutions may be employed if a mucilaginous menstruum is used instead of water. It is important to pay attention to the size of the syringe. Patients, if not otherwise instructed, will often use a large syringe, and by injecting too much fluid injure the urethra. Lang uses syringes of three sizes holding respectively, one and a half, two, and three drachms, and to each case orders the size which seems most suitable.—*Brit. Med. Journal, Med. News*.

THE MICROBES OF PNEUMONIA.—DR. QUEISNER has examined the lungs of a number of children and adults dying from pneumonia, his results showed that the pneumonia coccus of Frankel and Weichselbaum is the usual bacterial

cause of true croupous pneumonia. This coccus was also found in the majority of cases of bronchopneumonia. In both children and grown up people the sputum contained the coccus at the very commencement of the lung affection, and its existence appeared to form a very good sign of the invasion of pneumonia of one kind or another. In the lungs of ten children who had died of various forms of pneumonia, primary as well as secondary to measles, diphtheria, and tuberculosis, Friedlander's pneumonia bacillus was not once found, but the coccus was found in eight cases. In several instances it was impossible to distinguish between the catarrhal and the croupous form, as even in undoubted catarrhal cases a very perceptible quantity of fibrinous exudation was found.—*Lancet*.

THE NATURE AND TREATMENT OF ECZEMA.—DR. UNNA reviews the position of this most interesting question, and, as usual, throws a new light on the subject. The standpoint which he takes up is the parasitic origin of eczema. He first contrasts the earlier opinions as to the influence of microorganisms on the skin. He shows that it is the strongest proof of the harmlessness of those which occasion the so-called vegetable parasitic diseases that they proliferate profusely. They would not be able to develop insidiously, almost imperceptibly, in the horny tissue if their excretion products exercised any very injurious or irritating effects on the living prickle-layer and cells of the cutis. Where we have to deal with organisms which are much more seriously injurious, we shall not obtain much microscopic evidence of their presence, for the more harmful their effect the fewer are necessary to bring about well-marked signs of irritation, under which the organisms will on their side suffer. In such cases only cultivations on artificial nutritive media can lead to any exact knowledge of the affections of the epidermis. In regard to eczema, the first systematic cultivation experiments have revealed an unexpectedly rich flora in the upper skin. It is scarcely conceivable, he thinks, that this enormous mass of organisms can have no connection with the etiology of eczema. However justifiable the keenest criticism may be with regard to any single parasite which is claimed to be the true and only cause of a certain affection of the epidermis, it is quite as unjustifiable to maintain a general skepticism against the parasitic nature of these affections in general. *The true and essential cause is the inoculation of the germ*, a germ for the most part, probably, of vegetable nature. Eczema, however, is only produced when the germ proliferates in the epidermis and its appendages. To effect this it is necessary, according to the parasitic theory, that this affected epidermis should be a good nutrient basis; and this condition embraces actually

everything which has been previously placed among the various predisposing and exciting causes. External warmth and moisture, simple inflammations, and stases, as well as the whole legion of external irritants, may be described as exciting causes, or better as *accidental improvements of the nutrient base*. That which is common to all the causes which have been discussed in the text-books up to the present time is, *that they can render the skin, and especially the epidermis and the nutritive fluids which penetrate it, favorable to the growth of the specific germs*. Eczema is, in his opinion, a chronic parasitic catarrh of the skin, with desquamation, itching, and the disposition to respond to irritation by exudation and well-marked inflammation. The treatment of chronic eczema divides itself into two heads—(a) By the use of anti-parasitic measures the germ itself is attacked; this is the *direct treatment*. (b) On the other hand, by it, the epidermis, which is the nutrient soil, becomes less suitable for the growth of the specific germ; this is the *indirect treatment*. In the search for new specifics against the various forms of eczema, their harmlessness for the general organism must be taken into consideration; and with regard to the reducing medicinal agents in particular, it must be noted whether there is an absence of irritating properties in their oxidation products.—*British Journal of Dermatology*.

STERILIZATION OF RUBBER CATHETERS.—DR. ALAPY (*Annales des Maladies des Organes Génito-urinaires*, July, 1890) describes a new method of effecting the sterilization of these instruments, which possesses, he asserts, the merit of being very effective, easy to carry out, and harmless to the instruments. After drawing attention to the effects of various antiseptics, such as carbolic acid, sublimate, etc., and heat as ordinarily applied, he goes on to describe his own plan, which practically consists in wrapping up the instruments, not more than three or four in a packet, in ordinary blotting paper, the ends of which are just twisted up. These packets are then placed in glass tubes, the mouths of which are sealed with a plug of cotton wool. The glass tubes are exposed for half an hour to ordinary steam, that is, to a temperature of 100° C. The packets of blotting paper are then removed, and kept in a drawer or box till they are required for use. They remain sterilized for any length of time provided the paper is not opened, as is shown by the fact that they are incapable of infecting either sterilized bouillon or sterilized urine.—*British Medical Journal*.

CALCIUM SULPHIDE IN CROUP.—The *Med. Reg.* (Ed.) recommends the use of the above drug in doses of one-tenth gr. hourly for the worst cases.

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SATURDAY, DECEMBER 6, 1890.

WINCKEL ON WESTERN OBSTETRICIANS.

PROFESSOR WINCKEL seems to think that the obstetricians of the West do not know very much about pelvimetry. At least, this is the construction we put upon the following sentences that may be found on page 460 of Edgar's Translation of Winckel's:¹ "When I hear statements made, such as those I often heard in America, in 1886, that narrowing of the pelvis hardly ever occurs there, I can only say that the clinical observation of normal and abnormal labor is still at a very low ebb in the whole of North America, with the exception of New York, Boston, and Philadelphia. Not alone are the majority of obstetrical wards very imperfect, but even in the larger services of this kind, for example, in the San Francisco County Hospital, they are entirely inaccessible to the student, and there is no question of the thorough working up of the material for observation there contained."

Certainly, this is a statement, *ex cathedra*. Professor Winckel's visit to the United States was of brief duration, and his reception by the profession was not remarkably cordial. In fact, until within a very recent period, he has been a comparatively unknown man in America. While in Chicago, unannounced he paid a visit to the Cook County Hospital, where he was hospitably received by one of the internes.

This recent graduate never having heard of Professor Winckel, politely conducted him

through the wards, and *en route* gave him some "pointers" on the preservation of the perineum and on the conduct of labor. The attention to these instructions was so close and so marked, that the young man, pleased with his attentive pupil, familiarly slapped Professor Winckel on the back, and cordially invited him to call again, to see some obstetrical operations!

Notwithstanding these severe and sharp animadversions, western obstetricians have given presumptive evidence of capability in their appreciation of Winckel's book. Publishers inform us that the sale of Edgar's translation is large and constantly increasing. Indeed, there are those in the trade that think this work will largely substitute American and English text-books. This fact, we regret, inasmuch as the book, taken as a whole, is inferior to at least two American treatises. The hearty welcome accorded Winckel's "Midwifery," we take it, is a typical example of the broad, liberal, American common sense, that quickly recognizes merit, totally irrespective of its source. In the light of Winckel's ungracious words, the large sale of the book is an instance of *noblesse oblige*, that the Germans would do well to imitate, seeing that, as at present informed, no similar case has been recorded in the annals of Teutonic medical literature.

Now, as to the truth or falsity of the allegation, we venture the opinion that midwifery, as an art, is carried to a much higher degree of perfection in America than on the Continent of Europe. With us, not only do women occupy a much more exalted position in the scale of human greatness, than in Germany or on the Continent generally, but also more or less highly qualified physicians replace more or less irresponsible midwives. It is then the natural and inevitable resultant of the conditions of our civilization, that our women should receive better care during confinement, than is the case on the Continent of Europe.

As to the infrequency of the contracted pelvis in the native-born American woman, that question was finally settled before the birth of Professor Winckel.

With us, the conditions of life among the working classes, both in cities and in the country, as respects abundant food, fresh air, and commodious dwellings above ground, are so favorable, that rhachitis is very uncommon, and osteomalacia

¹ Lehrbuch der Geburtshilfe. Leipzig: Verlag von Veib & Comp. 1889.

almost unrecorded. With us, among primiparæ, "lightening before labor"—the engagement of the head and lower uterine segment within the pelvic cavity,—is a constant occurrence, and it affords a strong presumption that the passage is big enough for the passenger. We do not measure the pelvis, simply because experience has demonstrated that it is not, as a general rule, a necessary precaution.

While this arraignment of the obstetricians of the West, and of Canada, by Professor Winckel is in the highest degree presumptuous, unwarranted and in bad taste, it may be well for the profession to act upon the suggestion. It is right to be taught by an enemy. Unquestionably, pelvimetry is not practiced to the extent that it deserves application. As to the utilization of the material in our hospitals for the purposes of clinical observation and of instruction, that is utterly out of the question with our present Republican form of government and hospital system.

MOUNTAIN-FEVER OF COLORADO.

DR. L. HUBER has described the fever of the mountains as it occurs at an elevation of 4000 feet above sea-level, in the *Medical News*. The author resides at Rocky Ford, Colorado, at a point where a rich valley has been rapidly converted, under an irrigation-system, into a farming country. The climate is dry, almost rainless; the soil is dry and sparsely covered with vegetation prior to the introduction of irrigation for agricultural purposes; marsh lands and stagnant ponds are almost unknown; the river currents, flowing through well-defined channels, are strong and there is no stagnation whence effluvia of a malarial character would be expected to rise. The supplies of drinking water are drawn from the irrigation ditches, filtered more or less thoroughly and stored in cisterns; when carefully filtered and stored in clean reservoirs the water will remain clear, tasteless and odorless for months; it is however hard and is called "alkali water." Opposed as these conditions are, for the most part, to our preconceived notions of the habitat of malarial fever the author is clearly of the opinion that mountain fever must be grouped with the diseases owning a malarial origin. In confirmation of this opinion, he states that ague and typical remittent fever have been observed by him in persons who

have not been away from the lofty region, of which he writes, for a number of years; the cases were contracted there and the remittent type is not identical with that form of fever which is usually known as "mountain-fever." The symptomatology of the latter is sketched as follows: beginning with a premonitory chill or chilly sensations, a febrile stage is ushered in which is more or less marked and persistent. The temperature ranges from 102° to 105° at the onset, but ordinarily falls several degrees during the first week. Remissions may occur, but they are neither uniform, nor marked; intermissions will often follow the onset and continue for a week, if the case is untreated, when the fever will return and, assuming a continued type, persist for two to four weeks. There are often localized pains in the head, back and limbs, in children especially severe distress in the gastric region will be noticed; the headache is often excruciating. Shooting pains, passing up and down the spinal column are often quite marked. These symptoms may closely simulate those of spinal meningitis, and sometimes the patient may lose the power of voluntary motion. Tremor may exist. In adults the tongue is coated excepting the tip, and sometimes the edges; in children the enlarged papillæ project through the coating and the tip of the tongue becomes strawberry-like; a clean tip to the tongue is noticed in nearly all those cases that ultimately assume the typhoid type. The ratio of pulse and temperature is commonly normal, but the pulse may be slow. Nausea and vomiting are not infrequent, but they do not persist. The bowels may be either loose or confined, the latter state being more frequent among children and is difficult to regulate by medication. Liver and spleen may be enlarged. Tenderness in the right iliac region is infrequent, but tympanites may arise. Delirium is not usual, but when it does occur it is low and muttering. Bronchial irritation and cough are not infrequent. The conjunctiva is usually suffused, and may show slight signs of jaundice. In children the pupils are widely dilated. The skin is apt to continue dry while the fever lasts, sweating occurring when it abates. The disease often determines with a copious sweating and free action of the bowels and kidneys. Convalescence is slow and accompanied with a strong tendency to the development of a mild though obstinate quotidian

intermittent fever. Relapses are prone to follow at the septenary periods, unless the case is closely watched and treated; in view of which it is always well to continue the use of antiperiodics for two or three weeks after convalescence is established. The fever undoubtedly tends to a self-limitation, but it may be so thrown out of its course by perturbing treatment as to take a firmer hold upon the patient and to thus become more grave. On general principles it may be said that medication should be primarily directed to the maintenance of open emunctories and the elimination of the *materies morbi* through them. The action of quinine and its congeners cannot always be depended upon to check the fever, or it is slow in producing the desired effect; in the high altitudes where this fever is found these drugs often cause an unpleasant impression upon the nervous centres.

In conclusion, it may be said that the term "mountain-fever" is not peculiar to Colorado, although the name of that State is perhaps more frequently attached to the title of the fever than that of any other, but it is more or less known throughout the whole Rocky Mountain region, as a term for a disease which may or may not be one and the same for all those widely separated localities; there is room for a fuller and more accurate knowledge in regard to the fevers of our western ranges of mountains. Dr. Huber is of the opinion that he has met with the mountain-fever as far to the eastward as in the valley of the Arkansas river, in western Kansas, although it was not there known by that appellation. His later experience, for several years, in Colorado has convinced him of the identity of the fever in the two very dissimilar situations.

PSOROSPERMES IN RELATION TO DISEASE.

In a recent number of the *Archives de Médecine Expérimentale*, DR. MELASSEZ gives the history of his discovery of psorospermes in man, and especially in epithelioma. In 1885 DR. ALBARRAN brought an epithelial cancer, removed from the maxilla, for examination. The coccidia were found in the preparation, but as the neoplasm was ulcerated, they might have been introduced secondarily. Subsequently, in 1889, DR. DARIER gave him sections from an obscure cutaneous affection (Paget's disease), in which protoplas-

mic masses were found in the interior of the epithelial cells. These psorospermes, analogous to those found in the liver of the hare, were also found in old sections of epithelioma and of acne varioliformis. These discoveries were reported at the time, and subsequently WICKHAM found the psorospermes in a nasal epithelioma, and CORNIL, DARIER, THOMA and SJÖBRING have published observations confirming the discovery of these organisms in epithelioma from various localities.

Recently VINCENT, in a communication to the Société de Biologie, reported that in numerous examinations of sections of epithelioma from various localities, he found among the epithelial nests or in their vicinity, organisms that resembled psorospermes. These bodies, about the size of mucous corpuscles, are surrounded by a refractive membrane, sometimes thin, sometimes quite thick, according to the age of the parasite. The protoplasm is occasionally amorphous, though more often granular and sometimes pigmented. In the centre of the cell there is a nuclear mass, round, triangular, or vaguely polygonal; sometimes it is formed by a voluminous agglomeration of round granules. Usually the shape of the psorosperm is round, though this may be modified by compression. To detect them very fine sections should be rapidly passed through ammonia of 15.9 Boume, washed in water, colored for five minutes in a concentrated alcoholic solution of safranin; then partially decolorized in acetic acid, washed in water, and the decolorization completed in alcohol until the sections have a rosy tint; then immerse in oil of cloves, xylol and balsam. A double coloring may be obtained with fluorescein or hæmatoxylin. The psorosperm, colored red, may be separated from the protoplasm of the cell in which it is included, by the retraction of its membrane from staining. It is not rare for some of the psorospermes to fail to take the staining fluid. Efforts to cultivate the psorosperm have not succeeded.

DR. L. PFEIFFER, in a recent brochure on protozoa as the cause of disease, states that where the psorosperm is included in a cell, sometimes the nucleus of the cell takes part in the hypertrophy. Sometimes it is atrophied, and the parasite, substituting itself for the cell, lives as a normal cell by borrowing the elements for its nutrition from its vicinage. Sometimes the germs

of the parasite are accumulated in the cell and a small number only are developed. In the latter case the infection is not very dangerous to the animal organism.

Organisms of this class have been found in several species of snails, in the intestine of mice (the *eimeria falciforme*), in the intestine and liver of hares, in the blood (diphtheria) and the tissues (variola) of birds. In man they seem intimately associated with the development of molluscum contagiosum, Paget's disease and epithelioma.

EDITORIAL NOTES.

WAITING FOR THE VERDICT.—By cable dispatch to the New York Associated Press, we learn that on November 22, the Emperor of Germany bestowed the Grand Cross of the Order of the Red Eagle upon Robert Koch. This is the first time that this decoration has been bestowed upon any one who did not possess the preceding classes of the order. We further learn that Prof. Koch disclaims responsibility for the statements put in his mouth in regard to his experiments. He blames the press for raising exaggerated hopes of instant benefit in every form of tuberculosis. Prof. Virchow, speaking in the *Medicinische Gesellschaft*, referred to the subsidence of the enthusiasm, but defended Prof. Koch against the charge of prematurely publishing his discovery. Prof. Koch, he said, only consented to the disclosures already made at the request of Minister von Gossler and several of his medical colleagues, Drs. Virchow, Levy, and Bergmann. Every one in Prof. Koch's confidence supports his protests against the sensational anticipations regarding the results of the remedy.

Meanwhile unreasonable complaints are coming to the surface of want of accommodations for tuberculous patients in Berlin, as well as a clamor regarding favored doctors, stinted lymph supply and unseasonable climatic conditions. Much dissatisfaction is also expressed that the seal of secrecy has not as yet been removed, so far as the modes of preparation and the essential elements of the discovery are concerned.

We deprecate the absurd rumors and immature opinions that are dispensed in the interviews of the secular press, both at home and abroad, as calculated to wreck a really great reputation. Koch has been so free from the juggleries of the

charlatan, and withal such a candid investigator that we think that any imputation of concealment an aspersion. At all events the same military government which recognized the talents of a Moltke, has still further and more nobly honored itself in the decoration of Koch, not so much for what is expected as for what has already been done. Having the rights of a benefactor, and being an honest man, he may be safely entrusted with a choice of methods. As yet, he has not had the benefit of a further and fuller statement, so that none of his critics can claim any privileges until Koch himself is ready with his case before a jury of his peers. His opinions are always entitled to respect if not to full credence. Claiming so little for himself and never with the blare of the trumpet, he unconsciously presents to the world the type of the ideal physician.

UN SOUND ATHLETICISM.—A sanitary census has recently been made in an athletic club of New York City, and it was shown thereby that it had quite a number of damaged members. Out of thirty-three all-round athletes in the club five years ago, three had died by consumption, five have to wear trusses for hernia, four or five are lop-shouldered, and three or more have impaired hearing and catarrh. For robust health and longevity it is best not to look among those who go their full lengths in modern systems of athleticism.

LOSS OF LIFE ON ENGLISH RAILWAYS.—The *British Medical Journal* has pointed out the frequent occurrence of railway accidents that are directly or indirectly due to intemperance in alcoholic drink among the employes of the companies, and has recommended that the example set by a number of American companies should be followed, who have adopted special rules to secure sobriety on the part of their workmen. This has been done, according to the *Journal*, because it has proved to be the best guarantee against accident; fifty-four companies insist upon total abstinence among their men, while on duty; and twenty companies, while "on duty and off;" and one company will not engage any who are not total abstainers.

A new departure in cremation is reported. A patent has been taken out in France for an electric furnace for the rapid incineration of human remains.

TOPICS OF THE WEEK.

LEPROSY IN THE REPUBLIC OF COLUMBIA, SOUTH AMERICA.

The local authorities have drawn attention to the alarming spread of leprosy lately in this republic. It is impossible to obtain reliable figures, but putting the entire population at 6,000,000 inhabitants, the lowest estimate gives 18,000 lepers. The tuberculated, non-tuberculated, and mutilating forms are all met with, the tubercular form being the most common.

In this country, the disease occurs chiefly in places having a temperature of 73° F. to 64° F., damp and low-lying districts being especially favorable for the development of the disease; whilst places having a temperature of 80° F. and upwards seem to have some influence in mitigating the course of the disease. This is seen in the Government lazaretto at Agna-de-Dois, two and a half days' journey from here. Here the unfortunate victims undoubtedly obtain some relief from their sufferings, and in some cases improve sufficiently to be able to earn their own living, though no systematic course of treatment is adopted at that establishment. Very few cases are reported from places having a temperature of 80° F., and of those cases nearly all said to have contracted the disease in colder climates.

In favor of the contagious nature of the disease there is the strongest evidence. In districts in which the disease was formerly unknown, it has appeared and spread with great rapidity, the first cases appearing shortly after the return of former inhabitants of the district who had contracted the disease in a distant province, but contagion seems only to have occurred where the leprosy and healthy lived together on terms of great intimacy, eating and drinking out of the same vessels and using the same clothes. On the other hand, where more attention was paid to cleanliness, cases are recorded where the healthy remained unaffected.

As regards the hereditary aspect, no case is recorded of children being born leprosy, but the offspring of lepers have become lepers generally about puberty or a few years later, though some show signs as young as 6 years of age; but considering the bad hygienic conditions generally present, many of these so-called hereditary cases may really be due to contagion.

As to articles of diet, the greater number of cases occur where fish cannot be obtained; in these places, hog's flesh in various forms, impure water, the immoderate use of cayenne pepper and *chicha*, a drink made from the fermentation of maize, are considered as favorable to the development of the disease.

The race most frequently attacked are the whites, next the mixed Indians and whites, then the pure Indian, and finally the (African) negro race, which seems to be the least frequently attacked.

The principal other diseases occurring in leprosy districts are, in order of frequency, malarial fevers, various hepatic diseases, dysentery, rheumatism, and scrofula.

That localities of a certain temperature, namely, from 64° F. to 73° F., are the most infected districts there is no

doubt; and it is popularly believed that sudden changes of temperature from heat to cold are frequently the means of producing the disease.

And another factor I believe in producing the disease, speaking, of course, of Columbia, lies in the poor and insufficient food, bad ventilation, and the overcrowding, so common among the poorer classes in this country.—Dr. Edward H. Hicks, of Bogota, *Brit. Med. Jour.*

THE "MORGAGNI" AND "LISTER" BAS-RELIEFS AT ROME.

The *façade* of the Policlinico now advancing to completion at Rome will, as we have already stated, consist of two parts—one representing the medical, the other the surgical, wards of the institution. The former will have as its distinctive ornament a bas-relief in honor of John Baptist Morgagni, the Father of Medical Pathology, and five of the leading sculptors of Italy have sent in their designs for the subject prescribed by the "Commissione Giudicatrice" the well-known artists Bartolini, Basce, Pizzichelli, Zocchi, and Ximenes being the competitors. The subject is "Morgagni delivering a lecture in the Pathological Theatre." The decision of the "Commissione" will shortly be announced, and we can only say at present that Ximenes, by his own consent, has been withdrawn from the competition. The bas-relief for the surgical *façade* will represent the "Father of Antiseptic Surgery," also in a characteristic *pose*, and the competing sculptors engaged on it have to send in their designs at an early date. The names of the sculptors and the artistic effects they seek to convey we shall then be able to give.—*The Lancet*.

PHYSICAL EDUCATION.

Civilized man often tends to begin at the wrong end of things; or, at least, while striving for a desirable end, to ignore some essentials for success, simply because, viewed in the faulty perspective of civilization, they seem inconspicuous. The discussion on the claims and limits of physical education in schools, published in the *British Medical Journal* of November 1, is to be doubly welcomed; for it proves not only the existence of a hiatus in the educational system which obtains amongst us, but indicates that amongst those best qualified to recognize that lack there is now aroused an interest so deep and widespread as to afford good hope of its being made good ultimately. While many people have hitherto been content to forget that education can really be only the "bringing out" of the latent power and the proper guiding of the innate tendencies of the individual, still more have overlooked the fact that this nursing and training process is not merely applicable to, but actually necessary for, body as well as mind. Savagedom compels the one; civilization implies the other; but, as a broad rule, either tends to exclude the other in these two opposite conditions. Each chapter of the world's story is a repetition of the fact that, after a nation has emerged from barbarism, there comes a stage in its history in which the physical perfection essential to the successful savage dwindles in proportion to the attainment of more intellectual culture by the individual. In the age-long race between the nations, stamina must tell no less than

speed; and the intellectual spurt must fail if the general staying power of the race is progressively diluted by those less vigorous individuals whom a one-sided system of education unfits for protracted struggle, while the amenities of a modern civilization protect them from extinction.

The safeguard against this danger clearly lies in the systematic carrying out of the physical side of true education, begun in the earliest years of life, and applied in appropriate fashion to both sexes. It may be easier to begin at the top, and the examples set by the larger and the older schools undoubtedly influence the rest; but permanent success can only be attained by working from the foundation upwards; by making due care of the body such a habit of the child that respect for the body and a just pride in the exercise of its full powers shall be ingrained in the moral nature of every man and woman. A full realization of these facts will supply the modern *paterfamilias* with a satisfactory answer to more than one aspect of his recurrent question, "What to do with our boys"—and girls?—Editorial, *Brit. Med. Journ.*

ENCOURAGE HOME SCIENCE.

When we read of the encouragement Koch is receiving from the German government, of the clinical material, laboratory facilities, and funds placed in profusion at his disposal, we are constrained to admit that there are elements of value in the paternal style of government. Nobody grudges the little bit of taxes that goes to such a purpose. But here, where everything is left to individual exertion, too often it is seen that what is everybody's business is assumed by nobody. The importance to humanity of such investigation as Dixon's cannot be overestimated. Not all the wars, nor all the pestilences, "since first the leaky ark reposed in the mud," have destroyed a tithe of the lives that have fallen victims to the tubercle bacillus. Not a home exists but has put on mourning for some loved one dying from consumption. Yet not an effort is made to put our own countrymen on an equality with the European investigators, as regards facilities for this work.—*Times and Register*.

OLIVER WENDELL HOLMES "DE SENECTUTE."

The present age is remarkable, among other things, for the physical and intellectual vitality of its old men. It is not only that—thanks to the advance of medicine, preventive and curative—we have more old men amongst us than formerly, but that, so far from lagging superfluous on the stage of life, the veterans continue to play most of the principal parts with all the ardor, and sometimes more than the versatility, of youth. In all departments of modern life—in politics, in the Church, in the army, in science, and in literature, we see men whose years are far beyond the psalmist's limit predominant not only in influence and reputation, but in the amount and quality of their actual work. Among the octogenarians on whose mental brow time writes no wrinkles, none is more interesting to medical men than the genial "Autocrat" of so many hearts both in England and America, whom, in spite of the poet's days which he wears so gracefully, we are proud to claim as a professional brother. Oliver

Wendell Holmes, who celebrated his 81st birthday on August 29, is still one of the most vivacious of men; age cannot wither the freshness of his interest in life, nor deaden the cheerful sparkle of his style. Even of "crabbed age" and the inevitable sorrows and bereavements which it brings with it he writes with an easy wit, quite untinged with cynicism, which *circum praeordia ludit* and brightens the dismal subject so as to make it amusing even to his fellow-sufferers. From the purely medical point of view his account of his mode of life is instructive as well as interesting. For a long time back, he says, he has taken extreme care of himself. Never robust, he was still wiry in his earlier and maturer life; but since he reached the age of 80 his hygienic vigilance is unceasing. The rooms which he daily occupies are equipped with barometers, thermometers, aërometers—with every kind of instrument, in short, to prevent his incurring the slightest risk of taking cold. As pneumonia is the deadliest foe of old age, he does his utmost to keep it at a distance. He never gets up during winter until he knows the exact temperature, or takes his bath without having the water accurately tested. He lives by rule, and the rule is inflexible. His time is scrupulously divided—so much allotted to reading, so much to writing, so much to exercise, so much to recreation. His meals are studies of prudence and digestion. He understands the specific qualities of all ordinary foods, and never departs from the severest discretion in eating. To this strict hygienic discipline Dr. Holmes attributes his good health and the retention of his mental vigor.—*Brit. Med. Journal*.

A BACTERIOLOGICAL INSTITUTE AT ST. PETERSBURG.

By the munificence of Prince Alexander Petrovitch of Oldenburg, the Russian capital will soon have a well-appointed institution for the study of bacteriology. The institution, which is to be on a magnificent scale, will comprise operating and lecture rooms, private rooms for the professors, large laboratories, fitted with every requisite for research and supplied with abundant material, special rooms for microscopic work, etc. The building will be lighted throughout by electricity. The material, as well as the intellectual, needs of the workers, are to be provided for by refreshment rooms, buffets, and even bedrooms. The total cost of the institution is estimated at 1,650,000 francs (\$330,000).

CONTAGIOUS TUBERCULOSIS.

Dr. Ollivier has recently reported a case of contagious tuberculosis. A family of seven occupied a house at Neuilly. In two years five out of the seven were attacked with tuberculosis; two are dead and three are seriously ill. The house had formerly been occupied by a family suffering from tuberculosis; in 1887 a child died in it from that disease. It is supposed that this case, which was the first, is the origin of the contamination. Dr. Ollivier concludes that it is dangerous to inhabit a house which has been previously inhabited by tuberculous patients, unless it be thoroughly disinfected. The paper should be stripped off, and the walls whitened with lime; the wainscoting and floor should be scraped and washed with a 1 in 1,000 solution of corrosive sublimate.—*Medical Record*.

PRACTICAL NOTES.

TREATMENT OF THE ALGID STAGE OF CHOLERA.

In the Fiume Hospital the method by which the algid stage of cholera was treated during the last epidemic was by giving gum ammoniac internally, together with stimulants, and injecting sulphuric ether hypodermically. According to Dr. Ritter von Giacich, the director of the hospital, this plan, which was always adopted, proved most successful, a great improvement taking place in 50 per cent. of the cases in a couple of hours' time. This made itself manifest, not only by a rise of temperature and a stronger pulse, but also by the expression of the face becoming less pinched and anxious, after which the patient made good progress towards convalescence. Warm baths were often administered with advantage. Where three hours elapsed after the treatment above mentioned without manifest improvement, the case always proved fatal.—*Lancet*.

For a child, 8 years old, suffering from debility after an attack of acute Bright's disease, Holo-peter prescribed the following:

- R. Tr. Ferri chlor., f3j.
Acidi acetici, f3ij.
Strychniæ sulph., gr. ½.
Liq. ammon. acet., f3iss.
Syr. tolutani, q. s. ad. f3iij.
℞. Sig. 3j every four hours.

CHLOROFORM IN CONVULSIONS.

Inhalations of chloroform are invaluable in arresting convulsions in children of 2 years or under. Give them a whiff of it while in the convulsion. The paroxysm having been broken, the following should be given to prevent recurrence:

- R. Sodii bromidi, 3j.
Chloral hydrat., 3ss.
Aq. menthæ pip.,
Syr. tolutani, aa f3iv.
℞. Sig. f3ss; one every half hour until child is quieted down.

—*Times and Register*.

SULPHONAL IN DIABETES.

Dr. Casarelli, of Pisa, mentions the favorable action of sulphonal in diabetes. This drug diminishes the quantity of sugar in the urine, also reducing the polyuria and the thirst. These results were obtained by doses of from 5 to 30 grs. per diem, but not to so marked a degree as with doses of 45 grs. continued for several days. The 30-gr. doses could be administered for some time without any ill effects; but although the 40-gr. doses at first caused no disturbance, it was found that, when they were continued for any length-

ened period, they caused giddiness and excessive sleepiness, which disappeared when the drug was discontinued. Sulphonal was used with good results in conjunction with both a mixed diet and a strictly meat diet; in the latter case a large quantity of sugar appeared in the urine as soon as the sulphonal was stopped. In the only case in which antipyrin had been previously used it was found to exert less influence than sulphonal.

In a severe case of acne associated with rosacea Shoemaker advised and prescribed as follows: Wash the face in hot water, as hot as can be borne. Drink a cupful of hot water upon retiring and upon rising. Have the pustules punctured by a physician; the incision thus produced will not cicatrize, whereas, if they are squeezed, they heal with a scar. Take internally:

- R. Liq. potassii arsenitis,
Tr. nucis vomicæ, aa gtt. lxxij.
Aloini, gtt. ij.
Aq. menthæ pip., q. s. f3iij.
℞. Sig. f3j ter in die.

Apply externally:

- R. Acidi borici, 3j.
Lanolini, 3j.
Ol eucalyptol, gtt. v.
Ung. zinci oxidi, 3j.
Bismuthi subnit., 3j.
℞. Sig. Ft. unguentum.

—*Times and Register*.

DR. HARE gives for acute stage of bronchitis in children:

- R. Tr. aconiti, gtt. xij.
Syr. ipecac, f3ss-j.
Liq. potassii citratis, q. s. ad. f3iij.
M. and S. One teaspoonful every three hours.

For the later stages:

- R. Ammonii chloridi, 3j.
Ext. glycyrrhizæ fl., f3iv.
Aquæ dest., q. s. ad. f3iij.
℞. and S. One teaspoonful three times a day.

FOR PAINFUL SKIN DISEASES.

- R—Salolis, gr. x.
Plumbi carbonat, 3ss.
Ung. mentholis, 3ss. ℞

Menthol ointment contains five to fifteen grains of menthol to the ounce.—Shoemaker, *Times and Register*.

A FORMULA FOR INSECT BITES.

One of the very best applications for the bites of mosquitoes and fleas, also for other eruptions attended with intense itchings, is: Menthol in alcohol, one part to ten. This is very cooling and immediately effectual. It is also an excellent lotion for application to the forehead and temples in headache, often at once subduing the same.

SOCIETY PROCEEDINGS.

Southern Surgical and Gynecological Association.

Third Annual Meeting, held in Atlanta, Ga., November 11, 12 and 13, 1890.

(Concluded from page 806.)

SECOND DAY—AFTERNOON SESSION.

DR. W. O. ROBERTS, of Louisville, read a paper on

REMOVAL OF STONE FROM FEMALE BLADDER THROUGH THE URETHRA, WITH CASES.

This paper was devoted simply to his individual experience in the extraction through the urethra of stone from the bladder of the female. The cases thus treated were six in number; the ages of the patients ranged from 15 to 56 years. Four were married, but only two had borne children. The stones were phosphatic in four cases, uric acid in one, and an incrustated fringed body in another. In one, a very hysterical patient, the stone had for its nucleus a piece of soft wood. In one the patient had a vesicovaginal fistula which had been closed by an operation some months prior to the occurrence of the symptoms of stone. In another the bladder had been opened by a surgeon in doing an ovariectomy upon the patient a year before the stone was discovered.

In four of the cases the stones were single, in one there were two, and in one nine. In this case the patient had passed at various times a number of small stones, from two to seven at a given micturition. These stones varied in size from that of a grain of wheat to a grain of coffee. In two years she had collected 184 stones, a number not representing all she had passed.

The extraction was done in every case under chloroform, the patient being profoundly anesthetized. The urethral dilatation was begun with forceps, and completed by means of the fingers. The little finger being first introduced, the ring finger next, and finally the index finger. The fingers were well oiled. In Case 1 the stone was found to be almost an inch and a half in diameter. In Case 2 the stone was found in the urethra, and proved to be a piece of soft wood heavily incrustated with urinary salts. In case 3 the stone was spherical, and had a diameter of about one-half inch. In case 4 the stone was ovoid, its long diameter being an inch, the shorter three-fourths of an inch. In Case 5 there were nine stones, the smallest measuring circumambiently two and one-fourth inches; weight eighty-four grains.

DR. WILLIAM FERRIN NICOLSON, of Atlanta, Georgia, presented a paper entitled

WET ANTISEPTIC DRESSINGS IN INJURIES OF THE HAND.

After dwelling upon the importance of the subject, both from the standpoint of the future earning capacity of the patient, and the large amount of financial compensation demanded from corporations, he stated that for seven or eight years past he had looked after the surgery of several railroads and manufacturing establishments, and in that time had been called upon to treat more than three hundred hand injuries, representing all grades of injury from slight contusion to complete destruction of the larger part of the hand. The especial point that was urged in the paper was the doctrine formulated by Verneuil—*never to use a scalpel in a hand injury*. The old teaching, that when a finger was crushed you should go far enough behind the injury to secure a sound flap and amputate, was pernicious in the extreme, and had cost thousands of fingers that would have been restored to usefulness. Only such parts as were actually destroyed and pulpified should be removed, and all the tissues to come away could be amputated with the scissors. Projecting pieces of bone could be removed with pliers until reduced to the level of the fleshy parts. In compound fractures the parts should be coaptated as well as possible, and the line of separation be determined by nature, and under strict antiseptic dressings. Such a slough was harmless. Another point to which attention was forcibly called was the utilization of blood clot in filling up ragged injuries, and by its substitution the restoration of lost parts. When a finger was crushed off, the end should be trimmed with scissors, and the clot utilized in building up a tissue over the bone. In reference to dressings, Dr. Nicolson said that he had tried almost all varieties, and had finally obtained the most satisfactory results from keeping the parts constantly bathed in a non-poisonous antiseptic solution.

In dealing with these wounds they were first cleansed as well as possible, and then bathed in sublimate solution. Over all wounds a piece of aseptic rubber tissue or oiled silk was placed, then iodoform and sublimate gauze, and finally over all a covering of rubber tissue, into which at some convenient point a small opening was made. The patient was then given a bottle of antiseptic solution, to be carried in his pocket if moving about, and instructed to pour at frequent intervals enough into this opening to saturate the dressings. He uses almost exclusively listerine, combined with a small amount of carbolic acid, in the proportion of half an ounce of the former and half a drachm of the latter, in a six ounce mixture. If there was much pain, a small amount of aqueous extract of opium was added. These dressings were not disturbed until the third day, when they were removed under antiseptis, to preserve the integrity of the blood clot.

Wet dressing was substituted at the end of about a week by the ordinary antiseptic dressings, kept moist by external covering of rubber tissue. Should sloughing occur, it is kept wet for a longer time by the antiseptic. Under this treatment pain was reduced to the minimum. Suppuration never occurred, and the separation of sloughs was facilitated by the warm moisture.

DR. T. J. WILSON, of Sherman, Tex., read a paper on

UTERINE MOLES AND THEIR TREATMENT.

In the few cases that have come under his observation, they have been more troublesome and elicited more anxiety than most writers indicate they should, and the hæmorrhage in some of the cases was alarming. Then, too, there were some points noticed in his cases which he had failed to find described in text-books.

All authorities seem agreed upon the etiological and pathological view generally taken of it, that it is a blighted or altered conception; the ovum having perished, its covering or the placenta, if formed when this change takes place, becomes attached to and continues to receive nourishment through the uterine walls, and remains or becomes an organized product until it is thrown off; and this condition is attributed by some to the vitality retained in the villi of the chorion.

He had never met with a case that was lying loose in the uterus, but all were more or less adherent to its walls, and most of them to the posterior wall. They had to be taken away piecemeal, and the surface well curetted, washed out, and carbolic acid or Churchill's iodine applied to the surface. They all require after-treatment, because all except one case of hydatiform mole had endometritis and endocervicitis, two had severe cervical lacerations and erosions. Most of them had a greater flow than usual at the subsequent menstrual periods until the inflammatory condition was relieved. In two cases the general health, while not robust, was fairly good; the others more or less delicate, none of them in perfect health. None had any history of a cancerous cachexia nor of syphilitic taint; one was tuberculous. His experience had taught him to believe that if these cases do not receive treatment at a proper time there are two great dangers to be apprehended, viz.: hæmorrhage, which, if not an immediate cause of death, is capable of leading indirectly to that end—and septic poisoning.

In the treatment, if the cervix is sufficiently dilated and hæmorrhage troublesome, the mass should be promptly removed. If this cannot be done, a hot antiseptic douche should be given, followed by a careful and efficient tampon, with the internal administration of ergot and anodynes if required, directing quiet, rest and simple diet. In from twelve to fifteen hours the tampon should be removed and the foreign body extracted as

completely as practicable; this will require a good stout pair of forceps. He had used the ordinary dressing forceps and placental forceps, for the purpose. An excellent instrument in some cases is Emmet's curette forceps. The surface should be well curetted with a wire curette, the uterus thoroughly washed out with a hot solution of bichloride of mercury, and Squibb's crude carbolic acid or Churchill's tincture of iodine well applied to the surface. If much bleeding ensues—and this is not usual—the application of persulphate or perchloride of iron gives good results. The patient is put to bed and kept there as long as the indication in each special case may require. She is put upon a tonic treatment, and hot vaginal antiseptic washes. In from three to five days the uterus may need curetting again and another intra-uterine douche; then the application of iodine about twice a week, alternated occasionally, perhaps, with carbolic acid as long as may seem necessary, and the cure, if possible, completed of any uterine disease that may exist. The patient's general health is carefully looked after and her mind tranquilized.

THIRD DAY—MORNING SESSION.

DR. G. FRANK LYDSTON, of Chicago, read a very elaborate and lengthy paper entitled

A REVIEW OF THE TREATMENT OF VARICOCELE, WITH CASES.

He said, in discussing the merits of various operative procedures, it was unnecessary to take them up in detail. The *raison d'être* of many specially devised and named operations is apparent only to the operator. For practical purposes the various methods may be divided into, 1, acupressure; 2, subcutaneous deligation; 3, open deligation; 4, deligation with resection of veins; 5, deligation with resection of scrotum; 6, resection of the scrotum.

The employment of acupressure, to Dr. Lydston's mind, was an evidence of a lack of faith in modern antisepsis. It reminded him of the Dutchman's method of cutting off his dog's tail an inch at a time so that it would not hurt him so much. Gradual obliteration of veins has all the dangers of immediate deligation in a marked degree, and had none of its advantages. The term acupressure covered practically all methods of gradual obliteration of the veins of which Davat's operation is an illustration. Subcutaneous deligation is not essentially dangerous in skilful hands. Simple as the operation appears, however, accidents have occurred. The operation is done in the dark and more tissue is included in the ligature than is necessary. Strangulation of tissue is not conducive of safety. Scrotal hæmatocele, phlebitis, septic infection, thrombosis and embolism are possible. The vas deferens had been included in the ligature. He does not

condemn the subcutaneous operation in suitable cases, and in skilful hands, but he believes there are better and safer methods on the average. There is little choice between deligation without disturbance of the veins and deligation with resection of the veins, excepting the remotely greater danger of sepsis in the latter. Gould's method of division by cautery he believes to be the most dangerous operation yet devised. The dangers of the open method are in a less degree those of the subcutaneous deligation. If open deligation be determined upon, the operation should be done as high up as possible in the straight portion of the veins, and a single ligature applied to the vein. Deligation with resection of the scrotum he considers to be the ideal operation, in the majority of cases requiring surgical interference. His plan is as follows: An incision is made parallel with the spermatic cord, just below the external ring. This incision should be about one inch in length. The cord is hooked out with an aneurism needle, the vein separated and tied, the ligature is cut through and the cord dropped. Sutures and antiseptic dressings complete the operation. The scrotum is now amputated by the improved Henry operation. Dr. Lydston uses decalcified bone drainage tube, and juniperized silk ligatures and sutures. Resection of the scrotum he considers the simplest and safest operation for varicoceles of moderate size. In the more marked forms the affection invariably recurs to a greater or less extent. He does not, therefore, consider the so-called Henry operation a radical cure in the true sense of the word. The author reported a large number of cases operated upon by various methods with results, and, as far as could be learned, the subsequent history of the patient. The author had noticed hydrocele as a result of subcutaneous deligation in two cases, one operated upon by himself, and the other by another surgeon. The doctor reported one very interesting case in which the scrotum was continually bathed in bloody perspiration, and in which the seminal ejaculations were heavily tinged with blood.

DR. WILLIS F. WESTMORELAND, of Atlanta, presented a paper on *Morbid Reflex Neuroses*.

DR. GEO. A. BAXTER, of Chattanooga, read a paper on

SILICATE OF SODA; SOME NEW METHODS OF USE IN SURGERY,

in which he said the jacket of baked silicate of soda which he would present to the Association possessed all the qualities to be found in the plaster, firmness and support, and weighs actually one pound and six ounces. It is neater in appearance and finish, can be perforated like leather for ventilation, which plaster cannot. It is even lighter than leather without its costly process of construction, and has the same advantage over

the woven wire jacket with the additional advantage over both these latter and all others of this class, that it can be constructed by any surgeon at any time or in any place. Dr. Baxter suspends his patient and puts roughly a plaster jacket around her and cuts this as soon as it has hardened enough to retain its shape, hereby lessening materially the time of suspension, the most trying ordeal with this or the plaster, and not without its dangers when long continued,—bind the cut edges together where it has been cut down directly in front with cords, and then place a core of paper in the center. This paper core is used for two reasons: 1, to heighten the cast and take as little plaster as possible, and 2, to dry it the more readily by heating the inside. This done, the plaster is poured around the core and inside the cast, which gives him a mould of the body in extension and counter-extension, exact in every respect. Around this is made the silicate jacket after the manner of the plaster roller bandage, weaving one-half inch metal strips in the meshes of the bandage at a distance of four inches apart around the whole cast, an inside lining of a knit shirt having been first placed over the cast. The whole is then placed over a coal oil stove and allowed to dry out, which it does in from one-half to two hours less, especially if the cast has been previously dried. This process of heating not only dries the silicate, but bakes it well, and renders it impervious to the action of water or the perspiration, and gives it sufficient strength to allow of it being perforated for ventilation. It is now cut from the mould with a straight incision down the center, two pieces of leather, to which button, hooks or eyelets have been previously attached, sewed up and down the front on each side, then the whole can be laced up solid or loosened and taken off at will. The necessity of taking off a jacket or leaving it on during the whole course of treatment will, of course, depend upon the character of the disease and of the injury under treatment.

DR. EDWIN RICKETTS, of Cincinnati, Ohio, contributed a paper entitled

SURGERY OF THE GALL BLADDER,

in which he said to Langenbach was due the credit of totally extirpating the gall bladder, and to J. Marion Sims we owed a debt of gratitude for establishing the operation of cholecystotomy.

Dr. Ricketts reported seven cases of gall stones.

Case 1.—Mrs. —, aged 38, married, consulted him in 1880, for a tumor in her right side in the region of the gall bladder. Said she had passed by the bowel, following a severe attack of hepatic colic, a number of gall stones. She was emaciated and suffered from what she claimed was neuralgia of the stomach. She was slightly jaundiced and bowels constipated. Upon examination of the abdomen the tumor was well marked

and nodulated, above which was the liver surface smooth. He made the diagnosis of gall stone, and urged an operation. The patient's physician, however, urged the expectant plan of treatment which was accepted by the patient. She then went to the country and in less than three months had an attack of hepatic colic, followed by peritonitis, dying inside of three days.

Case 3.—Ellen ———, colored, age 50, consulted him for a markedly distended gall bladder which made its appearance after a hard day's work over the washtub. She had been sick for ten days with fever, temperature reaching 103°, rapid pulse, clayish stools, with occasional attacks of hepatic colic, though not severe. He opened the gall bladder, turning out one pint of fluid which consisted of bile, mucus and pus, stitching the gall bladder up against the peritoneum. After three days catarrhal plugs were washed out of the common duct through the abdominal incision in which had been deposited a glass drainage tube. The fistulous tract is still open, discharging periodically, but with no bad results to the patient.

In *Case 4*, a diagnosis of cancer of the liver was made by the attending physician. The gall bladder was opened and the stone turned out weighed 128 grains, and the common duct was filled with catarrhal deposits.

Case 5.—After incising the gall bladder there escaped first about one drachm of pus, after which Dr. Ricketts turned out 23 stones. A diagnosis of cancer of the liver in this case was made by the attending physicians.

DR. HUNTER P. COOPER, of Atlanta, Georgia, reported a case of *Fracture of the Femur due to Fragility*.

DR. GEO. H. NOBLE, of Atlanta, followed with an illustrative paper on *Procedentia Uteri*.

THIRD DAY—AFTERNOON SESSION.

DR. W. HAMPTON CALDWELL, of Lexington, Ky., read a paper on

RECTAL MEDICATION,

in which he said that several years ago he was convinced of the utility and safety of rectal administration of medicine, and had ever since regarded it as a most important plan of treatment. Since we accept the theory of the local origin or manifestation of the majority of diseases, this idea of rectal administration of medicines was more readily accepted as scientific in its applications than at any time heretofore. The rectal suppository consisting of cocoa butter, incorporated with the various therapeutical agents, affords the most efficient and pleasant mode of administration in our possession. Rectal suppositories satisfy all requirements as a local or constitutional remedy. They are neat, convenient, and in almost every

instance preferred by the patient to the administration of the same drug by mouth. In the administration of the anodynes it is certainly a superior method of administration of all others, as the sensitive stomach is no longer a barrier or excuse in the administration of even the most disagreeable medical agents, for we well know in many instances that this organ is either tolerant to opiates, or the patient has an invincible objection to taking them, the impossibilities of the rectal administration being thrown up is one great advantage over all other methods of administration. The effects of rectal medication embrace a wide range of actions, including anodyne, antiseptic, alterant and astringent. In severe pain they certainly afford the best and safest source by which our patient's suffering can be relieved, as the action upon the rectal surface of a diffusible anodyne is quite rapid and produces an effect about as soon as when administered by the stomach. In all inflammatory or painful affections of the abdominal or pelvic organs, this plan of administration has succeeded better than all others with the author.

DR. THAD. A. REAMY, of Cincinnati, Ohio, reported a case in which he removed a stone weighing 365 grains, by vaginal cystotomy, from the bladder of a child six years of age, with injury of the ureter. Operations done for closing the bladder were difficult, but ultimately successful. He exhibited the stone and made some comments on the case.

He felt after the stone was removed, that it would have been better to have made supra-pubic cystotomy. Had he known the size of the stone, he would have probably done that operation. But in view of the fact that it was partly encysted, that the bladder walls were much inflamed and thickened, also the fact that in the child the parietal peritoneum dips much lower down in front of the bladder than in the adult, it became a serious question whether this course would have been better than the one pursued.

It was not clear whether the ureter was damaged in the removal of the stone, or was exposed by the sloughing which occurred much later on. He was inclined to favor the former view, and that the discharge of urine into the tissues of the bladder wall, in the line of suture, was to no small degree responsible for some of the failures in closing the bladder. However, until the last operation the most critical examination failed to discover the ureter.

Though Parvin, Campbell, and others have turned an exposed ureter into the bladder the speaker was not aware that it had heretofore been done in a subject so young. The vagina being so small, rendered the manipulation difficult in the extreme.

DR. JAMES A. GOGGANS, of Alexandria City, Alabama, read a paper on

THE SURGICAL TREATMENT OF EMPYEMA.

He said during the last eighteen months he had treated six cases of empyema which developed in the wake of pneumonia, all of which have made perfect recoveries. These patients varied in age from 3 to 35 years.

Surgical treatment was the one which has been the most successfully employed. Spontaneous cures, he said, were rare—so rare that surgical interference was the rule. There were many methods of operating for the removal of pus from the pleural cavity, but they may be classified under two general headings: 1, The closed method, which consists in removing the pus by simple puncture with some kind of trocar or modern aspirator and allowing the puncture to heal at once. 2, The open method which consists in making an incision more or less free with the introduction of some kind of drainage tubes to maintain the perfect evacuation of the fluid, and admit of medicated washings, and to promote free ingress and egress of air that has been passed through an antiseptic dressing. The surgical treatment then being an absolute necessity, we cannot overestimate the importance of making the diagnosis certain by resorting to exploratory puncture with a hypodermic syringe. We can assure the patient and friends that no evil results can come from this procedure, and that the prognosis positively depends upon this means of settling the diagnosis.

OFFICERS FOR 1891:

President.—Dr. L. S. McMurtry, Louisville, Ky.

First Vice-President.—Dr. J. McF. Gaston, Atlanta, Ga.

Second Vice-President.—Dr. J. T. Wilson, Sherman, Tex.

Secretary.—Dr. W. E. B. Davis, Birmingham, Ala.

Treasurer.—Dr. Hardin P. Cochrane, Birmingham, Ala.

Place of meeting, Richmond, Virginia, second Tuesday in November, 1891.

NEW INSTRUMENTS.

VON KLEIN'S INTUBATION THIMBLE.

BY CARL H. VON KLEIN, M.D.,
OF DAYTON, O.

Among the most treacherous looking instruments in intubation of the larynx is the gag, and those who have performed the operation frequently know that there is nothing so shocking to the parent's feeling as when the gag is applied and slips, which in nine cases out of ten will produce bleeding of the gums, and when blood is seen they will beg, "Doctor, don't torture it, let

it die;" while in reality they are not hurt, but a slight bruising of the gums. However, I have had cases where the teeth broke out, and especially when the alveolar process of the maxillæ was very light the teeth turned out. I have of late

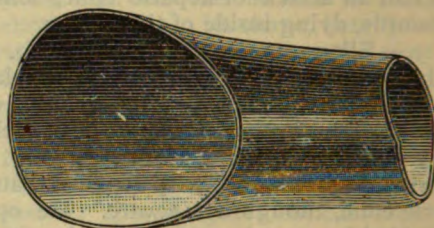


FIGURE 1.

become so disgusted with the gag, that I have intubated without, and have taken the chances of being bit. In one case I was badly bitten. I have now devised a thimble as shown in Fig. 1. Which is placed on the left index finger with which the glottis is elevated; hence, I perform with the finger two functions: the thimble on the first joint from the metacarpus as a gag, and with the two other joints to elevate the glottis as shown in Fig 2.

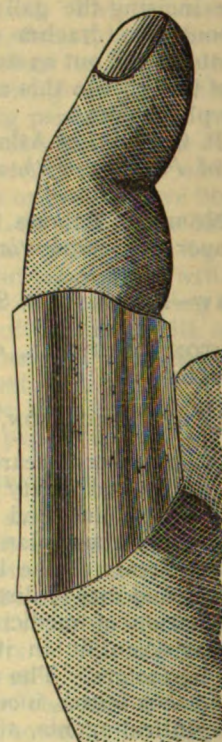


FIGURE 2

The thimble is made of coin silver and heavy enough to prevent bending it together with the teeth.

When the intubation is performed I pull the finger out and leave the thimble between the teeth, which the patient soon lets fall. The instrument will be known by surgical instrument dealers as "von Klein's Intubation Thimble."

BOOK REVIEWS.

ASTHMA CONSIDERED SPECIALLY IN RELATION TO NASAL DISEASES. By E. SCHMIEGELOW, M.D., of Copenhagen. London: H. K. Lewis, 1890. Pp. 90.

The author states this essay to be an attempt to show how far diseases of the nasal cavities may affect asthmatic attacks and to modify the opinion that asthma is the result of a local nasal disease, the care of which would *eo ipso* cause the disappearance of the reflex neurosis as held by Prof. Hack, of Freiberg. He takes, with Germain-Sée, the position that asthma must be considered as a bulbar neurosis consisting in an excessive reflex irritability of the respiratory centre, which may be disturbed in its action by any competent peripheral irritation, and that nasal diseases sometimes, but not necessarily, constitute such an inciting factor in the asthmatic attack. In his own material he has noted asthma associated with nasal polypæ in 22 per cent. of his cases, and with chronic rhinitis in 8 per cent. The entire subject receives painstaking and fair-minded treatment which, in the present professional attitude toward reflex neuroses, is most commendable. The Continental bibliography and the historical matters relating to asthma are interestingly set forth in the introduction. It is a comprehensive and valuable addition to the literature of the disease.

THE THROAT AND NOSE, AND THEIR DISEASES.

With one hundred and twenty illustrations in color, and two hundred and thirty-five engravings. Designed and executed by the author. By LENNOX BROWNE, F.R.C.S.E., Senior Surgeon to the Central London Throat and Ear Hospital; Surgeon, and Aural Surgeon to the Royal Society of Musicians; Consulting Surgeon to the Newcastle Throat and Ear Hospital, etc. Third Edition, Revised and Enlarged. Philadelphia: Lea Brothers & Co. 1890. Chicago: A. C. McClurg & Co. Royal Octavo, pp. 716. Price \$6.50.

The early exhaustion of the second edition of this very valuable work has enabled the author not only to thoroughly revise, but to greatly enlarge the text, so that the present edition is in a very considerable measure an original work. Especially is this true of that portion which treats of intra-nasal and naso-pharyngeal diseases.

The science of laryngology and rhinology is making such unparalleled progress that only the most recent records properly represent its advancement.

The present addition is of special value, as affording the latest investigations and literature upon this important subject. The anatomy of the parts considered is fully given and admirably illustrated. The methods for the inspection of the mouth, fauces and larynx are fully described, both by text and illustration. All of the various forms of diseases of these parts are considered, with reference to their etiology, pathology, and treatment. Forty-five pages are given to a critical study of diphtheria and the directions for its treatment. Syphilitic diseases of these organs are fully considered. Tubercular affections, benign and malignant neoplasms, and neuroses, are critically described, and associate aural maladies, as well. The uses of gargles, sprays, and local appliances, and the various forms of needed apparatus for every variety of treatment are presented and copiously illustrated. The various surgical procedures necessary to the treatment of these organs are fully described, including tracheotomy, laryngotomy, intubation, etc. As a practical work on the treatment of diseases this will be found an exceedingly valuable volume. The methods are fully set forth in the text, and references are made to a very complete and valuable list of formulæ. The engravings are upon wood, and all reproductions from the author's pen-and-ink drawings, by the photo-engraving process. Fifteen colored lithographic plates containing one hundred and twenty illustrations give an added value to the volume.

While this work will be of essential service to the specialist it is one that should find a place in the library of every practicing physician. It serves admirably to illustrate the progress that is being made in medical literature, and especially in the departments which are considered.

The mechanical execution of the work is a credit to the publishers, so long and so favorably known to the profession.

MEDICAL DIAGNOSIS. With special reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DA COSTA, M.D., LL.D., Professor of Practice of Medicine and of Clinical Medicine at the Jefferson Medical College, Philadelphia; Physician to the Pennsylvania Hospital; Consulting Physician to the Children's Hospital, etc. Illustrated with Engravings on Wood. Seventh Edition, Revised. Philadelphia: J. B. Lippincott Co. London: Henrietta St., Covent Garden. 1890. Price \$6.

A writer so long and so favorably known as is Dr. Da Costa needs no introduction to medical readers at home or abroad. Six editions of his

work upon Diagnosis have been given to the public, and a copy is found upon the shelf of every considerable medical library. The value of his writings is well appreciated in other lands. A second German edition has just appeared in Berlin, a Russian translation has been made, and one in French is forthcoming. The inquiry is no more made, "Who reads an American book?" Aside from the ability of the writer the importance of his subject must command appreciation of the work and a liberal patronage everywhere. The power to discriminate diseases lies at the very foundation of all successful medical practice. The need of such a guide is imperative and universal. The author has fully appreciated that want, and in his successive editions it has been met in an admirable manner. The present edition has undergone that thorough revision which renders it abreast of the times. The agency of microorganisms in the production of disease is well considered. With this revision it continues to be, as it has been in times past, the standard work upon medical diagnosis.

SAUNDERS' POCKET MEDICAL LEXICON.

This dainty little volume, prepared by John M. Keating, M.D., of Philadelphia, and published by W. B. Saunders, 913 Walnut St., in that city, will be found to be a very serviceable pocket companion for practitioners, and especially for students in the class-room when larger works of the same kind are not easily accessible. It seems to be remarkably accurate in terminology, accentuation and definition. A full-faced type renders the reference to words as easy as in the larger works. Students will find the little volume very serviceable. A brief list of poisons and their antidotes is found at the close of the book.

DESCRIPTION OF THE JOHNS HOPKINS HOSPITAL.

By JOHN S. BILLINGS, M.D. Baltimore: Publications of the Johns Hopkins Hospital. 4to, Illustrated. 1890.

This is a rare specimen of book-making on a rare subject and occasion. It is equally a monument to Johns Hopkins, to John S. Billings and to scientific medicine. While we believe that there are many grave errors in these plans which would not be made again, the care and attention to the facilities for teaching, marks an era in the history of American medicine. Doubtless many municipal hospitals will be modeled after this typical institution, for in buildings as in living organisms morphology determines and is determined by function.

Two sentences may be quoted from Dr. Billings' address at the opening of the hospital. If these words could be appreciated by sentimentalists it would do more for hospital management in the United States than all their political meddling:

It is well known to those familiar with the subject, that

the sick in a hospital where medical instruction is given, receive more constant, careful, and thoughtful attention than do those in a hospital where no such instruction is given. The clinical teacher must do his best; keen eyes will note every error in diagnosis, every failure in results of treatment. (p. 33.)

Let these words be emblazoned on the entrance of every hospital supported by public funds and by private charities, for the acute and chronic diseases of mind and body, and the shameful stories of cruelty, neglect and mismanagement will disappear.

RAILWAY SURGERY. FOR RAILWAY SURGEONS, etc. By C. B. STEMEN, A.M., M.D., LL.D. With numerous Illustrations. St. Louis: J. H. Chambers & Co. 1890. 8vo, pp. 315.

This book sets forth substantially the large practical experience of the author in this particular surgical field, and a *résumé* of numerous papers submitted in medical societies by surgeons on topics germane to the title and the text. Interesting and instructive suggestions and directions for the management of railway emergency situations and the transportation of the injured make up several chapters, but it cannot be said that any part of the work is novel, and much of it is not abreast of recent surgical methods and surgical literature. In many places evidence of hasty preparation is apparent. The style is often vague, the construction grammatically faulty and the proof-reading defective. Reported cases are so lacking in detail that their value is frequently lost, and directions for operative procedure lack essential clearness. Injuries of the brain and spinal cord are superficially treated, and the matter of spinal concussion is left practically to quotations from Erichsen and Hammond. In his preface the author states it as his "strong belief that a treatise on this special department was greatly demanded." If such a need existed, it has not been fully met by this volume.

PRACTICAL ELECTRICITY IN MEDICINE AND SURGERY. By G. A. LIEBIG, JR., Ph.D., and GEO. H. ROHÉ, M.D. Philadelphia and London: F. A. Davis. 8vo, pp. 383. 1890.

The authors have produced an eminently useful and practical book, which can be commended to the practitioner who proposes to use electricity in the treatment of disease or for surgical work. Part I, of over 140 pages, gives a somewhat extended account of the physics of electricity which might possibly with propriety be left in large part to technical text-books. The presence of numerous algebraic formulæ gives an appearance of mathematics which to many may be more alarming than otherwise, though the subject is skilfully and plainly handled. Part II sets forth electro-physiology with many instructive and new illustrations, and electro-diagnosis is considered, somewhat briefly. The chapter on apparatus re-

calls rather prominently, by its cuts and text, the catalogues of various manufacturers. Part III takes up the applications of electricity and special electro-therapeutics in an optimistic spirit which is captivating, but may lead to some disappointment, it is feared. The list of diseases in which electricity is recommended embraces pretty much the entire nosological table of human ills. Apostoli's method is fully explained, but late experiments in regard to the germicidal quality of galvanism are not mentioned. The book is well arranged, profusely illustrated and clearly printed, with a useful appendix of tables and formulæ.

THE PHYSICIAN'S VISITING LIST. Philadelphia: Lindsay & Blakiston. 1891.

This little annual has reached its fourth year of publication. The needs and convenience of physicians have been carefully considered, and in the judgment of the publishers it most nearly meets their wants. Its tables are ample, its arrangements have given very general satisfaction. It is compact, convenient, and durable, and for these reasons it continues to be a favorite.

A TREATISE ON NEURALGIA. By E. P. HURD, M.D. The Physician's Leisure Library. Detroit: Geo. S. Davis. 12mo, pp. 153. 1890.

This little brochure gives in an interesting and practical manner a *résumé* of the most accredited views on the subject—in which the French writers, however, preponderate. In classification the author follows Vaulair and divides all neuralgias into idiopathic and symptomatic, assigning to the former group much the larger number, though intimating that advancing knowledge will curtail it. Perhaps a frank acknowledgment of inability to explain the true relations of many neuralgic pains would be more desirable than the misleading designation of "idiopathic." Treatment receives many pages and is necessarily polypharmaceutical. In an appendix of thirty-six pages all the more prominent drugs that are valued in the management of the various neuralgias are considered *seriatim*.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of October, 1890, compared with the preceding month, the reports indicate that inflammation of brain, measles, scarlet fever, membranous croup, pneumonia, typhoid fever (enteric), diphtheria and inflammation of bowels increased, and that cholera infantum, cholera morbus, dysentery and whooping cough decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity was less, the relative humidity was slightly more, the day ozone and the night ozone were more.

Compared with the average for the month of October in the four years 1886-1889, influenza, measles and pleuritis, were more prevalent, and whooping cough, typho-malarial fever, puerperal fever, cholera infantum, inflammation of bowels, cerebro-spinal meningitis and dysentery were less prevalent in October, 1890.

For the month of October, 1890, compared with the

average of corresponding months in the four years 1886-1889, the temperature was higher, the absolute humidity and the relative humidity were more, the day ozone and the night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of October, 1890, at 55 places, scarlet fever at 79 places, typhoid fever at 96 places, and measles at 18 places.

Reports from all sources show diphtheria reported at 2 places less, scarlet fever at 25 places more, typhoid fever at 23 places more in the month of October, 1890, than in the preceding month. Measles were reported at the same number of places as in the preceding month.

THE NEWBERRY LIBRARY, MEDICAL DEPARTMENT.—Current periodicals taken November 1890:

United States.

Albany Medical Annals, Albany.
American Druggist, New York.
American Journal of Insanity, Utica.
American Journal of Medical Science, Philadelphia.
American Journal of Obstetrics, New York.
American Journal of Ophthalmology, St. Louis.
American Journal of Pharmacy, Philadelphia.
American Practitioner and News, Louisville.
Annals of Surgery, St. Louis.
Archives of Gynecology, New York.
Archives of Ophthalmology, New York.
Archives of Otolology, New York.
Archives of Pediatrics, Philadelphia.
Atlanta Medical & Surgical Journal, Atlanta.
Boston Medical and Surgical Journal, Boston.
California Homoeopath, San Francisco.
Cincinnati Lancet and Clinic, Cincinnati.
Daniell's Medical Journal, Austin.
Dental Advertiser, Buffalo.
Dental Register, Cincinnati.
Druggists Circular, New York.
Eclectic Medical Journal, Cincinnati.
Gaillard's Medical Journal, New York.
International Journal of Surgery, New York.
Johns Hopkins Hospital Report, Baltimore.
Journal of Comp. Medicine, Philadelphia.
Journal of Cutaneous and Genito-Urinary Dis., New York.
Journal of Nervous and Mental Diseases, New York.
Journal of Respiratory Organs, New York.
Kansas Medical Journal, Topeka.
Maryland Medical Journal, Baltimore.
Medical Advance, Detroit.
Medical Analectic and Epitome, New York.
Medical and Surgical Reporter, Philadelphia.
Medical Bulletin, Philadelphia.
Medical Brief, St. Louis.
Medical News, Philadelphia.
Medical Record, New York.
Medical World, Philadelphia.
Nashville Journal of Medicine and Surgery, Nashville.
New England Medical Monthly, Danbury.
New Orleans Medical and Surgical Journal, New Orleans.
New York Medical Journal, New York.
New York Medical Times, New York.
North American Journal of Homoeopathy, New York.
Northwestern Lancet, St. Paul.
Obstetric Gazette, Cincinnati.
Pacific Medical Journal, San Francisco.
Physicians' Medical Journal, Indianapolis.
Quarterly Journal of Inebriety, Hartford, Conn.
St. Louis Courier of Medicine, St. Louis.
Satellite, Philadelphia.
Southern California Practitioner, Los Angeles.
Texas Courier Record of Medicine, Fort Dallas.
Therapeutic Gazette, Detroit.
Times and Register, Philadelphia.
Weekly Medical Review, St. Louis.

English.

Brain, London.
 British Gynecological Journal, London.
 British Journal of Dermatology, London.
 British Medical Journal, London.
 Dublin Journal, Dublin.
 Edinburgh Medical Journal, Edinburgh.
 Glasgow Medical Journal, Glasgow.
 Homœopathic World, London.
 Journal of Laryngology, London.
 Lancet, London.
 Mind, London.
 Monthly Homœopathic Review, London.
 Ophthalmic Review, London.
 Practitioner, London.
 Sanitary Journal, Glasgow.
 Sanitary Record, London.

Canada.

Canada Health Journal, Ottawa.
 Canada Lancet, Toronto.
 Montreal Medical Journal, Montreal.

Germany.

Archiv. für Mikras. Anatomie, Bonn.

Mexico.

Gazeta Medica, Mexico.

List of Gifts for the Month of October, 1890.

E. C. Dudley, M.D.: Unbound serials representing forty different journals.
 Library of Surgeon-General's Office, Washington, D.C.: Volumes ix-xi of the Index Catalogue.
 Chicago Public Library: Volumes cxxxi-cxxxii New Sydenham Soc. Publications; Trans. Amer. Association of Physicians, 1890; Trans. Am. Surgical Association, 1890; Trans. Illinois State Medical Society, 1890; Trans. Pennsylvania State Medical Society, 1890; Trans. Massachusetts State Medical Society, Vol. xv, No. 1.; Am. Pædiatric Society, Baltimore, Md., Vol. i of their Transactions.
 C. S. Mack, M.D., Ann Arbor, Mich.: Similia Similibus Curantur; Philosophy in Homœopathy.

LETTERS RECEIVED.

Dr. B. W. Davis, Montgomery, Vt.; Dr. T. Frierson, Columbia, Tenn.; Dr. J. S. Tipton, Hillsville, Va.; Dr. L. T. Lowder, Bloomington, Ind.; Dr. W. L. Schenck, Topeka, Kan.; Dr. T. E. Murrell, Little Rock, Ark.; Dr. J. J. Miller, Wellston, Mo.; Dr. T. B. Greenley, West Point, Ky.; Dr. M. I. Powers, Oskaloosa, Ia.; Dr. G. A. Hare, Mt. Vernon, O.; Dr. J. H. Kellogg, Battle Creek, Mich.; Dr. W. M. Shankland, Lewis Station, Mo.; Dr. S. N. Nelson, Revere, Mass.; Dr. G. H. Rohé, Baltimore, Md.; Dr. C. F. Ulrich, Wheeling, W. Va.; Dr. Wm. T. Ousley, Glasgow, Ky.; Dr. G. E. Wire, Dr. W. F. Coleman, Dr. G. Frank Lydston, Dr. J. C. Hoag, Subscription News Co., Chicago; A. J. Cook, Dr. Wm. B. Atkinson, Dr. G. E. de Schweinitz, Dr. T. S. Westcott, Dr. R. J. Dunglison, Dr. L. H. Adler, A. H. Fracker, Philadelphia; N. Y. Polyclinic, Dr. T. H. Manley, Dr. F. King, Howard Challen, Scott & Bowne, W. P. Cleary, G. E. Stechert, Dr. J. A. Wyeth, Dr. M. E. Van Sleet, J. H. Bates, Dr. W. P. Robinson, R. A. Ward, F. S. Mason, Boehringer & Soehne, New York City; Dr. E. F. Brush, Mount Vernon, N. Y.; Egbert, Fidler & Chambers, Davenport, Ia.; Columbus Medical College, Dr. Wm. D. Hamilton, Columbus, O.; Medical Department University of Georgetown, Dr. C. H. A. Kleinschmidt, Washington, D. C.; Dr. H. O. Marcy, Doliber-Goodale Co., Boston; Dr. J. T. Crow, Carrollton, Ill.; Dios Chemical Co., Dr. H. C. Dalton, Dr. L. H. Laidlee, Dr. Pinckney French, St. Louis, Mo.; Med. Dept. University of Buffalo, Buffalo, N. Y.; Dr. E. O. Bell, Uhrichsville, O.; C. A. Heaton, New Haven, Conn.; Dr. A. W. Campbell, Montreal; Dr. E. T. Christian, Wyandotte, Mich.; Dr. G. E. Hotchkiss, Barbour, Md.; Dr. O. E. Werner, Mil-

waukee, Wis.; Dr. G. W. Schwartz, Summer Hill, Ill.; Dr. H. McKennan, Paris, Ill.; Dr. H. B. Kurtz, Cleveland, O.; Dr. M. A. Bogie, Kansas City, Mo.; New Orleans Med. and Surg. Journal, New Orleans, La.; T. F. Goode, Buffalo Lithia Springs, Va.; Dr. E. F. Wells, Richmond, Ind.; Bennett's Newspaper Agency, Quincy, Mich.; Dr. J. K. Stephens, Fulton, Ky.; Dr. Chas. Whelan, Birmingham, Ala.; Dr. T. W. Gordon, Georgetown, O.; W. D. Kline, Dr. A. G. Sinclair, Memphis, Tenn.; Dr. W. R. Thompson, Troy, O.; Dr. C. G. Bacon, Fulton, N. Y.; Wm. Davis, Omaha, Neb.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 22, 1890, to November 28, 1890.

Capt. Charles B. Ewing, Asst. Surgeon, in addition to his present duties, is assigned to duty as examiner of recruits at St. Louis, Mo. By direction of the Secretary of War. Par. 7, S. O. 275, A. G. O., Hdqrs. of the Army, November 24, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 29, 1890.

P. A. Surgeon M. H. Crawford, ordered to the receiving ship "Independence."
 P. A. Surgeon E. H. Marsteller, ordered to the U. S. S. "Petrel."
 P. A. Surgeon Francis S. Nash, resigned from the U. S. Navy, to take effect November 23, 1891.
 P. A. Surgeon F. J. B. Cordeiro, granted extension of leave for four months, with permission to leave the United States.
 Medical Director Philip Lansdale (retired), granted one year's leave, with permission to leave the United States.
 Adrian, Richard Alfred, commissioned an Asst. Surgeon in the U. S. Navy from November 24, 1890.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Week Ending November 22, 1890.

P. A. Surgeon H. R. Carter, granted leave of absence for fifteen days. November 14, 1890.
 Asst. Surgeon G. M. Guitéras, granted leave of absence for thirty days. October 29, 1890.
 Asst. Surgeon S. H. Hussey, to proceed to South Atlantic Quarantine Station for temporary duty. October 28, 1890.
 Asst. Surgeon H. D. Geddings, granted leave of absence for fourteen days. November 14, 1890.
 Asst. Surgeon J. F. Groenevelt, to report to the Supt. of Immigration for temporary duty. October 28, 1890.
 Surgeon C. S. D. Fessenden, granted leave of absence for fourteen days. November 22, 1890.
 Surgeon H. W. Austin, detailed as chairman of Board of Medical Officers to convene in Washington, D. C., December 1, 1890. November 19, 1890.
 Surgeon Fairfax Irwin, detailed as member of Board of Medical Officers to convene in Washington, D. C., December 1, 1890. November 19, 1890.
 Asst. Surgeon J. J. Kinyoun, detailed as recorder of Board of Medical Officers to convene in Washington, D. C., December 1, 1890. November 19, 1890.
 Asst. Surgeon R. M. Woodward, granted leave of absence for fourteen days. November 21, 1890.
 Asst. Surgeon A. W. Condict, to proceed to Cairo, Ill., for temporary duty. November 19, 1890.
 Asst. Surgeon W. G. Stimpson, to proceed to Cape Charles Quarantine for temporary duty. November 20, 1890.

PROMOTION.

P. A. Surgeon J. J. Kinyoun, commissioned as P. A. Surgeon by the President. November 21, 1890.

APPOINTMENT.

Asst. Surgeon L. E. Cofer, commissioned as Asst. Surgeon by the President. November 21, 1890.

THE Journal of the American Medical Association.

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CHICAGO, DECEMBER 13, 1890.

No. 24.

ORIGINAL ARTICLES.

A FEW MORE REMARKS ON DERMATITIS HERPETIFORMIS.

Read in the Section of Dermatology and Syphilography, at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY A. RAVOGLI, M.D.,
OF CINCINNATI, O.

Since Duhring, in 1884, called the attention of dermatologists to a group of eruptions of the skin under the name of dermatitis herpetiformis, interest in these eruptions has greatly increased, because many affections of this kind could find their right nosological place in dermatology. Many of these cases were formerly confounded with erythema multiformis, others with herpes iris, others with pemphigus; impetigo herpetiformis hebræ remaining a peculiar eruption out of any definite nosological class. As the bulla was characteristic of pemphigus, so every bullous eruption was characterized as such, and on account of the pruritus, the adjective of pruriginosus was added. Duhring's work consisted in definitely establishing the general symptoms which constitute the type of these eruptions and thus refer them all to one group.

1. Polymorphism of the eruption.
2. Paresthesia.
3. Chronic course and relapse.
4. Relative general good feeling.

Certainly the disease is not a new one, for we find many descriptions of eruptive diseases of this kind scattered in the books of different authors, and called with different names. To-day these various eruptions are to be referred to this type dermatitis herpetiformis. So we find herpes phlyctænoides in Chansit, 1852; pemphigus circinatus in Rayer, 1828; pemphigus chronicus in Racle, jr., 1841; pemphigus compositus, herpes pemphigoides oder pemphigus herpetiformis in Devergie.

Cazenav¹ had already remarked that pemphigus sometimes is accompanied with different eruptions like herpes and prurigo, and in this case the affection is like to pompholix pruriginosus willan, where the patient is troubled with itching

and burning sensation. In these cases small vesicles are mixed with large bullæ aggregated into groups, resembling herpes phlyctenoides, while large bullæ of pemphigus are scattered on the cutaneous surface.

In Bazin, under the article "Arthritides Bullosæ," we find a description of two varieties of bullous eruptions, viz., pemphigus arthriticus and hydroa bullosa, where he includes all the symptoms of dermatitis herpetiformis.

Auspitz,² under the head of "Neuritic Dermatoses," established a group of eruptions which he named inflammatory trophoneuroses with a cyclic course. He gave to this class of eruptions the generical name of erythanthema, which he divided in two families, viz., those affecting the skin superficially and those affecting the skin deeply. He divided the last family in species vesicular, pustular and bullous, including herpes circinatus, iris, annulatus, herpes phlyctænoides, herpes impetiginosus and pemphigoides. As herpes impetiginosus he understood the disease described by Hebra as impetigo herpetiformis.

It would be superfluous for me in the brief space allowed to go on to review or recall all the authors who before Duhring described cases of this disease under one name or another, but I must refer the reader to the beautiful and complete work of L. Brocq on "Dermatitis Herpetiformis Duhring." Brocq differs with Duhring as regards the name and prefers *dermatitis polymorpha pruriginosa chronica a poussées successives*. It is a question of nomenclature, but the form remains the same, and we must be grateful to Duhring for having traced the principal symptoms which form the characteristics of this peculiar affection. The name of "dermatitis, inflammatio cutis," inflammation of the skin, seems to be rightly applied, as vesicles and bullæ are situated in a red halo, and this redness precedes the spreading of the eruption. The adjective herpetiformis gives the idea of vesicles with a tendency to aggregation.

There is no question that one of the most remarkable characteristics of this affection is the disposition to relapse, when a spot is nearly healed up a new crop of vesicles or bullæ comes up again. The genius of relapsing is so charac-

¹ Abregié, Pratiques des Maladies de la Peau, 1847.

² System der Hautkrankheiten, Wien, 1881.

teristic of this affection that, as Unna remarked,³ the cases referred to by Brocq, where no relapse had been seen, ought to be excluded from this group.

Paresthesia, perversion of the sense of touch is the dominant symptom in this disease. The patient complains of an itching and burning sensation together, which often prevents him from sleeping and obliges him to scratch his thick and infiltrated skin. This symptom is so important as to distinguish a case of dermatitis herpetiformis from a case of true pemphigus. The restlessness and the continuous scratching of the patient affected with this disease contrasts a great deal with the quietness and the dread of changing position in the patient affected with true pemphigus. According to Unna pemphigus pruriginosus is to be taken out of the group pemphigus and is to be comprehended in the group dermatitis herpetiformis. The perversion of the sense of touch revealed by the itching, shows the disorder in the sensitive nerves, which is the *causa proxima* of this disease.

Polymorphism of the exanthema forms another characteristic of the disease. Papules, vesicles, bullæ and pustules are found together in a striking way; but we can assert that the predominant feature is the vesicle and the bulla. I seldom saw a true pustule, but mostly are vesicles or bullæ filled with a turbid and purulent exudation. This remark has been already made by Brocq.

The condition of the general health maintained in this disease must be considered only as relative. The patient does not lose his appetite, but on account of the itching sensation loses a great deal of his sleep, and in some cases wastes away considerably.

To give a practical example I will take the liberty of reporting as briefly as possible a case of dermatitis herpetiformis, which I had the opportunity to study from its very beginning.

A gentleman, N. S., 53 years old, in the best of health, who never had any disease of any consequence, in very good financial condition, called in April, 1889, upon me complaining of an itching sensation all over his body, but more intense on the chest and on the arms. The skin white and smooth, was covered with an abundant panniculus adiposus and did not show anything with the exception of a few small red maculæ in the middle of the chest. A mild alcoholic solution of carbolic acid was prescribed for the purpose of diminishing the itching sensation. A few days after the patient came back complaining that the itching sensation was always more intense and at this time small papules like in eczema papulosum were scattered on the chest and on the shoulders. Under the impression that I had to do with an

eczema papulosum a salve consisting of oxid. zinc, subnitrate bismuth, carbolic acid and vaseline was given to be rubbed on the eruption. A few days after a papular eruption was spreading all over the body and on the limbs. The skin was red and the papules some were small, of the size of a grain of millet, and some larger and polyginal in shape, and depressed in the centre, resembling exactly the papules of lichen ruber-planus. At this time I had the idea that the case was one of lichen ruber scarlatiniformis. I prescribed then Asiatic pills from two to four a day, and bath with water where some wheat bran had been boiled, assuring the patient that in a few months everything would return in the normal condition. From this time I did not see the patient. Three months after I was called in consultation to see the same gentlemen. All his body was covered with bullæ filled up with clear serum ranging in size from that of a pea to that of a hen egg. Where the bullæ were broken, large excoriations remained. In the places where bullæ had already healed up the skin was dark brown in color, thickened, and large flattened papules were raised above the level of the skin. Bullæ were also coming on the mucous membrane of the lips, of the mouth and of the throat. These bullæ soon broke, leaving excoriations. The patient was extremely nervous and excitable, but his appetite was relatively maintained, and he could take a sufficient quantity of nourishment. The patient would get better from time to time, his excoriations would heal to a considerable extent, and we would all begin to hope for recovery, but relapse was sure to occur, and always preceded by slight elevation in temperature. At one time the whole body was one sore, bed clothing and everything stuck together. We feared reabsorption and it was deemed necessary to put the patient in a continuous bath. This, however, could only be used at intervals as the patient complained of chilliness, and it was necessary to have the water at the temperature of 98° F., which made him weak and produced congestion in the circulation of the brain. The continuous bath, in spite of all the difficulties, acted very satisfactorily. The eruption of new bullæ subsided and the extensive excoriations healed up considerably in about three weeks' time. But after three weeks we were obliged to quit the bath because this chill was so bad that the patient could not stand any more. The patient was now anointed with different salves, vaseline and salicylic acid, olive oil and carbolic acid, always in very mild proportions. New bullæ continued to appear, became rapidly purulent and the patient began to show symptoms of pyæmia. Fever ranged between 101° to 103°, pulse very weak and over 120, and his life was in great danger. Abundant doses of quinine reduced the temperature and the large discharging sores were

³ Ueber die Duhringshe Krankheit und eine neue Form derselben. Monatshefte für Pract. Derm., B. ix, No. 3.

dusted with iodoform powder, covered then with iodoform gauze. This treatment helped, the fever disappeared, the excoriations gradually healed up, so that the patient was able to get up and go out riding. When I left the patient he was almost well. No new bullæ were coming, and there remained only some itching sensation. His sleep was pretty good, appetite excellent. He wished to go to some resort and he chose Old Point Comfort.

I must remark some peculiar features of the general symptoms. The urine had been carefully examined every few days and it was found always of a normal acid reaction, never could any trace of albumen be detected, urates and phosphates were somewhat in excess. The most interesting symptoms were revealed in the nervous system. At times the gentleman was somewhat stupid, taking but little interest in surrounding things, at times he was irritable, and for some time was slightly delirious during the night.

His sleep was very agitated, he slept a few minutes at a time and no hypnotic could give him a few hours of rest. Night-sweats were very profuse, especially lately, when he was improving.

In order to give a complete account of the case it must be noted that the gentleman had another relapse at Old Point Comfort. He was not satisfied with the treatment and left for Philadelphia, where he went under the treatment of Dühring. From Philadelphia he went to New York, having another relapse, and he put himself under the treatment of Elliot and Bulkley. He came back to Cincinnati with still another relapse, and is now again under my charge.

It will be seen that the general feeling of well-being which is said to be characteristic of this disease is to be taken with a grain of salt; that, indeed, there are many interesting symptoms affecting the general health and more especially the nervous system.

In the beginning I called this case pemphigus pruriginosus, and I find that it has some likeness to the case lately published by Dr. Henry G. Piffard⁴ under this same name. However, I do not see any reason for leaving these cases separated when we can refer to one group of diseases which have the same symptoms in common and have nothing to do with real pemphigus.

I wish now to call your attention to another case of the same kind in which the eruption runs an exceedingly chronic course and has a kind of progressive way of spreading over the skin by continuity.

This is a lady, Mrs. X. Z., 57 years old, who has always enjoyed good health; she is five feet tall, 170 lbs. in weight, fleshy. Her skin is very white and delicate, panniculus adiposus abundant. She has been always in very good financial condition, belonged to the highest society. Four

years ago she lost her husband under the saddest conditions. After the death of her husband many investments were found to be valueless. The loss of her husband and the financial troubles threw her into deep grief. About three years ago there appeared on the index of the left hand an eruption in form of vesicles filled up with purulent matter. The eruption slowly spread over the back of the hand for a time then stopped, but the skin remained thick and of a brownish violet color. A few months after which an eruption of vesicles appeared on the lips, around the ears and on the temporal regions, the toes and the back of the right foot. At this time I was called in consultation by her family physician. The surface was completely covered with thick, yellow brownish crusts, having the appearance of an eczema impetiginosum. After removing the crusts with applications of olive oil, the surface was found to be covered with large spots, having in the center a dark brown color, with kind of papules and pustules scattered, and in the periphery deep excoriations in semicircular disposition; itching and burning sensation accompanied the eruption. Still under the impression that I had a case of eczema to deal with I applied unguentum diachylon hebræ spread on muslin. The result of this application was not satisfactory, as it brought out many more vesicles which were easily broken and left the surface more excoriated. The disease spread upon the periphery of the plaques, in the form of vesicles upon an inflammatory halo.

Vesicles and pustules of the size of a millet seed appeared on the tongue, and on the mucous membrane of the mouth and of the nose. These soon broke, causing serous discharges from the mouth and from the nose.

At this time a mild salve of resorcin was used (half drachm in one ounce of vaseline), but the burning caused thereby was so great that it was necessary to stop its application immediately. Internally, Fowler's arsenic solution, in doses from ten to fifteen drops a day, was prescribed. New conglomerated vesicles were continually developing at the edges, and forming semicircles. The epidermis covering the vesicles was easily removed, leaving the excoriations in form of crescents, extending on the parietal region. Another spot developed in the same way on the occipital region, running downward on the back of the neck. Every active remedy had proved unsatisfactory, increasing the irritation and bringing out new crops of vesicles, so we resorted to indifferent means, so as only to cover the skin and protect it from the contact of the air. The surface discharged a great quantity of serous fluid, which stuck the hair together, took an offensive smell, irritated the healthy skin with which it came in contact, and caused an unbearable itching sensation. The surface, therefore, was washed

⁴ Journal of Cutan. and Gen.-Urin. Diseases, New York, April, 1890.

twice a day with a mild solution of carbolic acid, and after having been dried as well as possible, a salve containing subnitrate of bismuth, oxyd. zinc, in the proportion of half drachm to one ounce of vaseline, with ten drops of carbolic acid, was applied with a brush. In this way the inflammation diminished and the excoriations healed up. The surface of the skin, however, remained highly pigmented, showing a dark brownish color, and because of abundant granulations it presented flat papules similar to those seen in impetigo herpetiformis.⁵

The affection was now at a kind of standstill. The excoriations remained in great part healed up, the discharge of serum nearly stopped. Once in a while a few small vesicles would appear on the old affected spots. As it was in summer time, the patient thought that if she went to some watering-place she might derive some benefit from the change of climate. I therefore lost sight of the patient for about nine months. I must express my thanks to Dr. Jos. Ransohoff, who called me again to see the case.

The eruption at this time had affected the forehead, the eyebrows, the eyelids, the nose, both cheeks, lips and chin, extended over the whole neck, down upon the breast and backwards on the shoulders, representing exactly a lace fichu. The skin was dark brownish-red, slightly swollen, with large flat papules, lighter in color, raised above the level of the normal skin. At times crops of small, miliariform vesicles and pustules appeared, scattered over this affected skin. The edges were raised above the level of the skin, show an uninterrupted row of vesicles, whitish, pulposus, from the size of a millet seed to that of a split pea, on a red, inflamed halo, which is extended upon the healthy skin. The whole resembles to some extent a burn produced by hot water. The slightest contact or rubbing removed the epidermis, and left an excoriation in semicircular form, neatly cut as if it had been done with a penknife. The itching sensation was unbearable, but the general health of the lady was relatively good; appetite and digestion good, and bowels regular. Sleep was disturbed by the itching sensation, but in spite of it the lady got some rest at night at intervals.

It is worthy of remark that at each new eruption the patient complained of some chilly sensation towards evening, and when the eruption was spreading so badly she had also some fever. New spots are now coming, one in the middle of the breast and one under the axilla. A small bulla of the size of a pea is the beginning, and this soon dries up, forming a slight brownish crust, then vesicles appear around the first, forming the spot, which grows and spreads regularly.

At present I am treating the patient with only

ichthyol. She takes from thirty to forty drops of ammon. sulph. icht. a day internally, and externally I paint the surface with a lotion of ichthyol, aqua rosæ and glycerine, equal parts. At first it caused some burning sensation, but soon it diminished. The itching sensation has diminished a great deal and the swelling is going down. Few new vesicles and pustules are coming and the old papules are slowly diminishing. The edges are still excoriated and discharging sero-purulent matter. The face is covered with paste zinci molis with ichthyol, according to Unna.

Looking over the literature of this disease, I find that there is an analogy between my case and a few cases which have been reported by Brocq in his "*Dermatitis Polymorpha Pruriginosa Chronica a poussées Successives*," *varietas gravis*. The first, No. 29, from Dr. Saddler, the eruption, spreading slowly, covered the whole body and had a fatal end. Two other cases under the numbers 31 and 32, the first from Bazin and the second from Rayer, have a great likeness to the case under consideration.

The cause of this disease is still in darkness, but without doubt it lies in alteration of the nervous system, as is the case in herpes zoster. The disease is not contagious, the fluid of the vesicles inoculated in rabbits has never given any result. The lady patient, of a very irritable nature, suffered for years under great grief. The moral trouble may have influenced her nervous system.

Brocq would not grant so great an influence to moral impressions, but would rather attribute the cause to an arthritic diathesis. In both our patients there was no sign whatever of rheumatic diathesis, although both were used to very high living. I return to my first idea, that the cause of the disease is to be found in the nervous system, which opinion is also maintained by Bulkley, Livering, Alfred Wiltshire and Wyndham Cottle for herpes gestationis.

The first symptom of this disease consists in the perversion of the sense of touch, paræsthesia, itching sensation, which shows that the sensitive nerves of the skin are affected. The itching and burning sensation in some cases is limited to the place of the skin which is affected, in others is spread all over the body. The patient cannot stand the pruritus, and scratches his skin to get some relief from his troublesome sensation. In our first patient the itching sensation was spread all over the body, but in the lady this was limited to the affected places, and preceded the new eruptive plaques. It seems that the paræsthesia is the symptom which speaks most for an alteration of the nervous system. If the itching sensation follows the eruption, then it must be believed that the infiltration and the anatomical alterations in the texture of the skin were the cause of the pruritus, but in our cases itching sensation was the first symptom, and preceded every eruption.

⁵ Hence the name given by Auspitz: herpes vegetans. Archiv. s. Dermatologie, 1868.

The form of the eruption differs according to the variety of dermatitis herpetiformis. In a general way we may say that it begins with erythematous plaques, which run into papules, or the epidermis is filled up with serous fluid in form of vesicles and bullæ, or with purulent exudation, vesicopustules and pustules. The texture of the skin is considerably altered, it remains infiltrated, thick, hard, highly pigmented and congested, of a brownish-violet color. In consequence of the vesicles, the bullæ and of the pustules, excoriations and crusts remain on the diseased skin. In the lady we found a considerable swelling and acute œdema of the eyelids and of the face when the eruption spread on this region.

The color of the erythematous plaques in the beginning is red purplish, and disappears somewhat under the pressure of the finger, and has nothing to do with the brownish-violet color, which we find in the infiltrated plaques where the eruption had its seat. The spreading of the eruption is different in the various cases. In our first case the bullæ appeared all over in large bunches, affecting one day the genital and the gluteal region, another day the limbs and the chest, and so on until the whole body was covered with bullæ. In the second case, however, the disease spread with the greatest regularity and the new eruption appeared on the edges, while at times relapses of pustules and vesicles occurred, scattered irregularly on the old infiltrated spots.

In a recent relapse in the first case, we can notice small reddish papules surmounted by small vesicles, of the size of a pin head, aggregated together like sudamina, spread over large regions of the body, while small pustules are scattered on the limbs. In the second case the vesicles are no larger than a millet grain to a split pea, brilliant like pearls, disposed in circles on the edge of the spot. The vesicles are easily broken, and the slightest contact removes the epidermis in form of shreds, leaving the corium uncovered. It is remarkable that any irritation, or any pressure is liable to bring out a new crop of vesicles. Vesicles come often on the occipital region which rests on the pillow. Just in the middle of the breast, where the springs of the corset rub, a new plaque is now coming. Another plaque of numerous vesicles is now formed under the armpit, where the two surfaces of the skin come in contact. Vesicobullæ are frequently developed on the tip of the fingers of the right hand from any attempt to sew or stick a pin, or button her clothes.

Comparing the two cases, we see that both are of long duration, but in the first we see a kind of tendency to acuteness, while in the second we see a tendency to chronicity. In the first, in each relapse there is a stormy appearance of vesicles and bullæ, while in the second we see the vesicles slowly formed and slowly but surely progressing.

I cannot say much about the duration of the

disease. Both our patients are improving, their general health is pretty good, appetite maintained, digestion fair, bowels moved regularly. The pulse is good, the heart in normal condition, no remarkable change in the chemical constitution of the urine. The patients did not lose much in their weight, and everything shows that the principal functions are in complete order. This removes any idea of fear for the life of the patients at present. The patients from Bazin and Bulkley were permanently cured. This encourages us, and we hope for the best.

What about treatment? While I was reporting the clinical history of the cases I told what we were administering to our patients. A great many remedies have already been tried, but all without satisfactory result. Milk diet, alkalines, purgative mineral waters, tartrate of potassium, arsenic, iodide of iron, tonics, strychnia, belladonna, atropia, cinchonidia, ergotine, tincture cantharides, iodide of potassium, etc.

Iodide of potassium has been already condemned. In some cases the arsenide of soda seems to have done good, especially Hutchinson claims great benefit from it. In both our cases we found arsenic of no account, if not pernicious. Fluid extract of ergot seems to have been of some benefit in our first case, but did not seem to have been of any benefit in our second case. I am actually trying internally ichthyol in the lady, and we can say that it has been useful, as she is somewhat better. She takes sixty drops a day in three doses.

Externally we can say that we have applied everything which can be found in the dermatological formulary. Unguent diachyl. hetræ, ung. zinc. benzoat, unguent resorcin, aristol, oleate of bismuth, oil and carbolic acid, liniment oleo calcarium, covered with cotton, baths with amylum, powders, etc.; but all without satisfactory result. I must remark that every time that unguent diachylon has been applied, more vesicles have come out. It seems to me that any slight irritant means applied on the skin, has increased the fury of the disease. I must state that I am treating the lady now with ichthyol. For the face, neck and shoulders I am using gelatine zinci mollis, with 2 per cent. of ichthyol. This has calmed the burning sensation. The itching is not so intense. The papules are flattened, and no new vesicles or pustules are coming on the affected places. The raw edges covered with this gelatine do not cause pain, and in some places are healing up. I think that this paste has given me more satisfaction than any other remedy used. For the breast I am using now ichthyol, aq. ros. and glycerine, equal parts, does not irritate, many excoriations have healed up, and I feel encouraged to keep on in its use.

In our first patient while under the treatment of Elliot also, ichthyol has been used in association with aq. calcis and oil of sweet almonds, and the patient improved considerably.

It seems to me that ichthyol has a peculiar sedative influence upon the final nervous ramifications. In several cases of pruritus, it has stopped the itching sensation, when every other remedy had failed. In many cases of nervous eczema, especially in children, a lotion of

Ammon. sulphoichthyol, ʒij.
Aq. ros.,
Glycerine, āā ʒss.

has given very satisfactory results. In the lady patient referred to, when any indifferent application caused burning, and eruption of new vesicles, ichthyol does not produce discomfort, diminishes the itching, and the excoriations, under the dark cover of the ichthyol, seem to heal up faster.

A well regulated diet is strictly necessary in the treatment of this disease. Our patient is now on an exclusive milk diet. Coffee, tea, wines and liquors are strictly forbidden.

Anything which is capable of producing erythema or urticaria, like strawberries, clams, lobsters, etc., must be avoided. Meat alimentation must be greatly reduced. The most digestible food must be selected. The bowels must be carefully watched and regulated accordingly.

With this case we have obtained some improvement of this interesting, proteiformis disease, which I dare to call "Dermatitis Herpetiformis Progressiva."

INSTRUMENTS AND APPLIANCES FOR THE ADMINISTRATION OF OXYGEN.

Exhibited before the Philadelphia County Medical Society, October 22, 1890.

BY JOHN AULDE, M.D.,
OF PHILADELPHIA, PA.

Having long entertained a favorable opinion of oxygen, it occurred to me some time ago that it would be of some interest to the members of this society if an opportunity were afforded for examining the various instruments and appliances for its exhibition. I have, therefore, made a collection of the different instruments which are now on the market, and shall endeavor to point out briefly the manner in which they are to be used in the treatment of disease. This agent has attracted considerable attention, more especially within the past five years, although ten years ago it would probably have been considered rank quackery to favor the use of oxygen. The large number of favorable reports which have recently appeared in medical literature furnish sufficient evidence to warrant us in making an effort to become more familiar with its advantages. My remarks this evening will be devoted exclusively to a description of the apparatus, dealing only incidentally with the therapeutical indications.

The first instrument which I show you is that manufactured by the White Dental Manufactur-

ing Company, of this city. The gas is supplied in cylinders containing 40 and 100 gallons, respectively; and attached to the cylinder we have a cloth-covered rubber bag which serves the purpose of a reservoir, so that only a small portion of the gas escapes, and thus the quantity inhaled can be measured. Attached to the inhaler, and forming a part of the apparatus, is a bottle partly filled with water, and as the patient inhales the gas, it passes through this water, and then enters the pulmonary tissues in the form of moist oxygen; it can be taken pure or mixed with atmospheric air, and unless the patient inhales the gas too rapidly no bad effects follow its administration. When properly practiced, inhalations of the gas have rather a pleasant and agreeable effect, and the only danger from rapid inhalations is that which would follow rapid breathing under any circumstances. The value of the muscular exercise in the procedure is an item which should be considered. (Fig. 1.)

The next apparatus to which I call your attention is made by the same manufacturers, and is intended for the exhibition of the gas by enemata, when for any reason its administration by inhalation cannot be practiced, or when, as in the case of typhoid fever we desire to obtain the more immediate effect of the gas upon the diseased structures. This apparatus consists essentially of two parts, connected with each other by means of rubber tubing. The one is a closed copper vessel, while the other is open, and the gas is forced into the rectum by the pressure of the water in the open vessel, the closed receptacle having first been filled with water, and connected with the cylinder until all the water had been displaced. This is a useful combination; but in the absence of the apparatus, the gas can be introduced into a bag, and pressure made upon it, when the gas will be forced into the lower bowel. In the present instance, the pressure is regulated by the height to which the open vessel containing the water is raised. (Fig. 2.)

A few years ago, I read with great interest an account of some experiments conducted by Dr. Kellogg, of Battle Creek, Michigan, upon guinea-pigs, by means of the rectal insufflation of oxygen gas. He found that, on opening the abdomen and isolating a loop of the mesentery, the introduction of the gas into the rectum caused the blood circulating in the veins to change to the arterial hue; on withdrawing the gas, the blood at once assumed the venous hue. These, and other experiments, go to show that the blood readily takes up oxygen and distributes it to the tissues, thus favoring combustion, but there never have been any demonstrations made to prove that the use of this gas would cause increased combustion and abnormal waste of the tissues through hyperoxygenation.

These cylinders are furnished by the manu-

facturers containing either pure oxygen gas or a mixture of oxygen in combination with nitrous oxide (nitrogen monoxide.) This gas, as you know, is used by dentists and surgeons for the production of anæsthesia, but when so used it is

directly from the cylinder, better results follow, on the supposition that the gas still retains some of its expansive force (due to compression) after reaching the lung structures, but this is doubtful. (Fig. 3.)

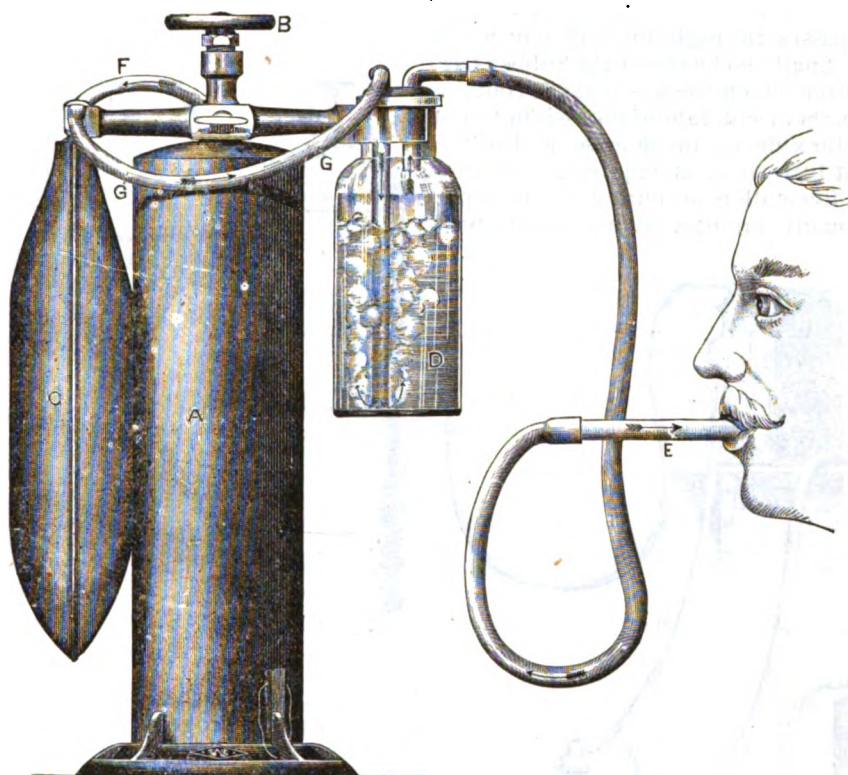


FIGURE 1.

administered in concentrated form ; when diluted, it acts as an exhilarant, and I presume it partakes of both these characters when combined with oxygen, and a considerable quantity slowly inhaled. It certainly has a quieting effect upon the nervous system, and often is far superior to the pure gas, or that diluted with atmospheric air.

The apparatus shown here is that manufactured by the Walton Company, of New York ; the cylinder contains one hundred gallons of compressed gas, two-thirds being pure oxygen, and one-third nitrous oxide. The inhaler is in the form of a bottle half-filled with water, and this is connected with the cylinder by a small rubber tube, which, with the glass tube in the inhaler, carries the gas to the bottom, when it makes its escape in the form of bubbles, as shown when I turn the stop-cock. In using this instrument, the patient or an attendant turns the stop-cock, allowing the gas to escape, when the patient inhales freely by deep inspiration, and the gas is immediately turned off. This operation is repeated a number of times during a *séance*, according to the directions of the physician. It is claimed that when the gas is used in this manner,

It not infrequently happens that we wish to send gas to our patient, or it may be demanded in the case of an emergency, and in such instances the gas can be drawn from the cylinder, collected in a cloth-covered rubber bag made for the purpose, and transported any reasonable distance. It is then at the command of the physician, and can be used by the nurse as required. The bag which I show you will hold ten gallons, and this usually will be quite sufficient for a day, when the container must be thoroughly washed with a solution of alcohol and water, in order to remove any impurities which may occur from the action of the gas upon the rubber lining of the bag.

The instruments which I have thus far exhibited require that the physician should purchase gas, but that which I now show you is a machine that I have had in use for several years, which enables the physician to make pure oxygen gas, which can be stored in a small office gasometer, or it can be used or distributed among patients in cloth-covered rubber bags such as I have exhibited. This is the oxygen generator introduced to the medical profession some years ago by Dr. Wallian, of New York, and is very complete,

and, withal, convenient for office use. The mixture of chlorate of potassium and binoxide of manganese is placed in the retort, and under this retort I now place a spirit-lamp constructed on the same principle as the argand burner. In a few minutes you will observe that the gas begins to form and passes through the different wash-bottles, and is finally collected in the rubber bag. The mixture from which the gas is made contains about seven parts of chlorate of potassium to one part of the binoxide of manganese, and in this proportion but little heat is required, and from ten to twenty-five gallons of pure gas can be prepared in as many minutes at a comparatively small cost.

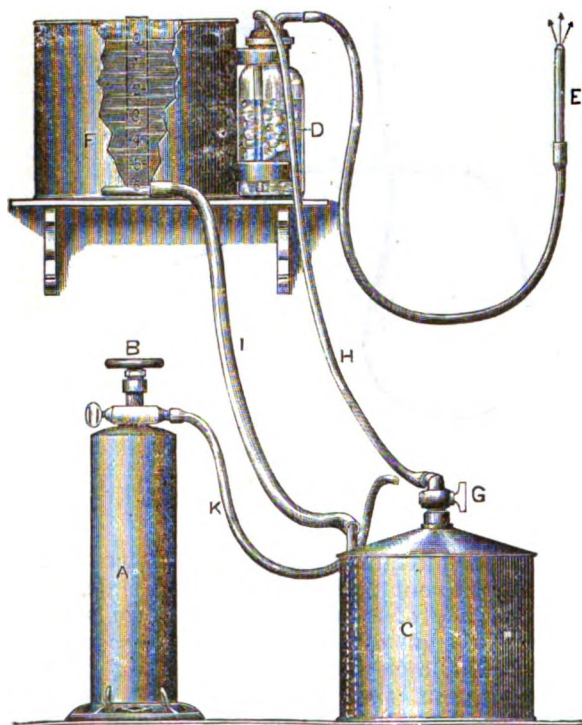


FIGURE 2.

In order to purify it, the gas is first passed through a solution of caustic soda, two bottles, and is next carried through a weak solution of nitrate of silver, and later through pure water. Ordinarily one would suppose that the gas would then be free from all impurities, but this is not the case, as it has been found on examination that gas thus prepared contains a minute quantity of chlorate of potash, and, in order to prevent this from passing over, it is necessary to pass the gas through a moderately thick layer of absorbent cotton. The presence of crystals of this substance has been demonstrated in cotton so used, after a considerable quantity of the gas had been allowed to pass through.

This machine I have found of service in the treatment of emergency cases, where oxygen was

indicated, and although the first cost is greater than when compressed gas is used, I have no doubt but that the general practitioner could frequently use it to advantage, as it is simple in construction, and made in a substantial manner. (Fig. 4.)

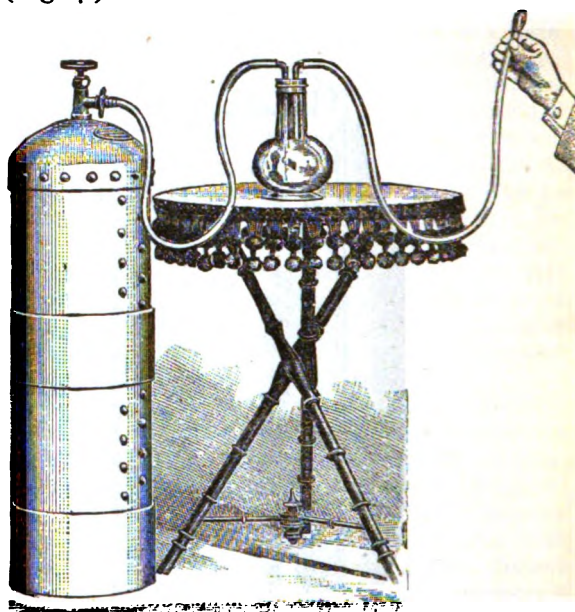


FIGURE 3.

You are aware that nascent oxygen can be obtained from hydrogen dioxide, and I desire therefore to call your attention to the form of an inhaler which I began using a number of years since, before I had the advantages afforded by a generator. It is a plan which can be utilized for those living at a distance from the physician's

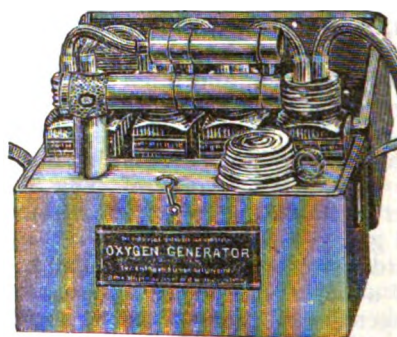


FIGURE 4.

office, or in the absence of the gas itself it may often be employed with much benefit. The inhaler, filled about one-third full of warm water, is placed in a quart tin cup, and a tablespoonful, more or less, of the solution of the peroxide of hydrogen placed in it, when nascent oxygen begins to be given off, and the patient inhales by using the mouthpiece.

Sometime ago, in the preparation of an article on "Creasote" (*Notes on New Remedies*, October, 1890), I took occasion to refer to a very excellent apparatus, kindly loaned to me by Lehn & Fink, of New York, and the invention of Dr. Daywalt, of San Francisco, for inhalations of that drug. It appeared so complete in detail that I could not withstand the temptation to present it for your consideration as a suitable inhaler for

fifteen-volume solution may be used in the local treatment of boils and carbuncles, or it may be used by patients suffering from uterine and vaginal affections by means of a tampon saturated with the solution and introduced into a gelatin capsule (veterinary size). A tampon prepared in this manner may be allowed to remain *in situ* over night, followed by the free use of hot water.

There is no instrument which offers to us such a wide range of application for the peroxide of hydrogen as this ingeniously constructed appara-

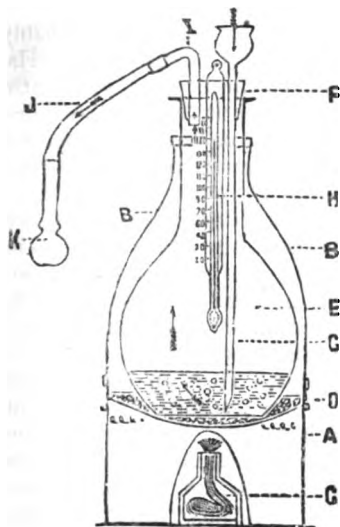


FIGURE 5.

the peroxide of hydrogen. The bottle in which the solution is placed is exposed on a sand-bath, which is heated by an alcohol lamp. The special advantage to be gained from the use of this instrument is due to the fact that we have a constant record of the temperature, a suitable thermometer being so adjusted in the cork that it reaches the liquid at the bottom while the mercury is in full view. (Fig. 5.)

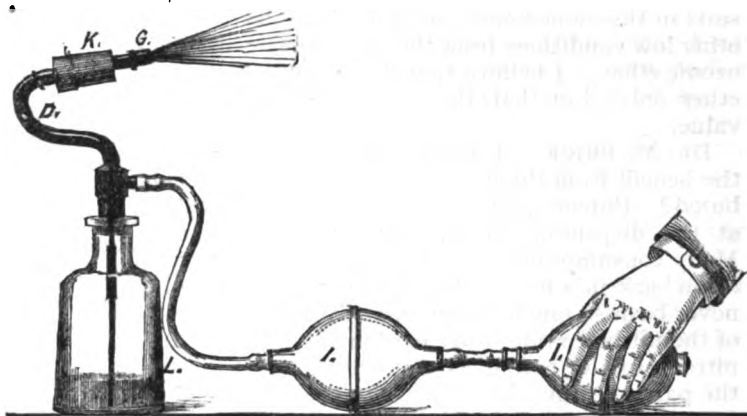


FIGURE 6.

tus placed on the market by Marchand, of New York. It is not only an atomizer, but also a vaporizer, and is so well adapted for local employment of this valuable remedy that it merits more than a passing notice. Throat, nasal, and bronchial troubles are so common that the physician will find himself behind the times who fails to take advantage of the benefits to be derived from the local employment of the peroxide by means of the atomizer and spray. Being perfectly harmless to the most delicate tissues, and wholly free from objectionable characteristics as regards

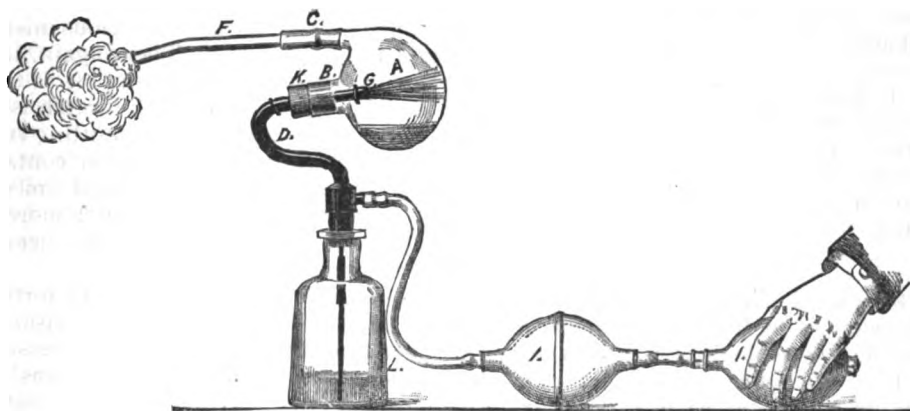


FIGURE 7.

Peroxide of hydrogen is also of service when employed as an antiseptic, and is of special value when there is a breaking down of tissue with the formation of pus. A small quantity of the usual

taste and smell, both the spray and vapor can be liberally used in the treatment of all forms of diphtheria, croup, and beginning quinsy, with the best prospects of success. (Figs. 6 to 7).

DISCUSSION.

DR. S. SOLIS-COHEN: I take exception to the remark of Dr. Aulde that ten years ago, the use of oxygen would have been looked upon as quackery. I am sorry that, in speaking of peroxide of hydrogen, Dr. Aulde did not speak of ozonic ether, which was introduced by the same man who has given nearly all that has been of service in recent years—Dr. Benjamin Ward Richardson. It is an ethereal solution of H^2O^3 , much stronger than the solution in water. I have seen good results in threatened collapse in typhoid fever and other low conditions from the hypodermic use of ozonic ether. I believe that this is not due to the ether only, but that the oxygen is of decided value.

DR. M. PRICE: I would like to ask to what the benefit from the use of nitrous oxide is attributed? Fifteen years ago we used nitrous oxide at the dispensary for the extraction of teeth. Many consumptive cases in which it was used came back in a few weeks stating that they had never been so much benefited as from inhalation of the nitrous oxide. My explanation is that the nitrous oxide, acting as an anæsthetic, lessens the pain of respiration, and the patient in his efforts to secure air expands the lungs, filling portions of them that have not been used. The action is just the same as where we break up the adhesions about an ankylosed joint under ether. I have employed the nitrous oxide in many cases of phthisis with advantage, and dentists have informed me that they have often been told by consumptive patients that they had been benefited by the inhalation of nitrous oxide.

DR. AULDE: Several years ago, I made some investigations with a view to the employment of Dr. Richardson's ozonic ether, but did not adopt it in practice for the reason that it gave off the fumes of ether, which is very objectionable to many persons; and second, because of its expense. As my remarks were not intended to deal with the therapeutic applications of oxygen, except incidentally, I cannot enter into a discussion of the physiological action of nitrous oxide, referred to by Dr. Price. In the course of my remarks I mentioned the supposed action of the nitrous oxide when given in concentrated form, as well as when diluted.

PUNCTURE AND COLLODION IN HYDROCELE.—

For the treatment of hydrocele Leroy recommends that one-third or one-fourth of the fluid be withdrawn by means of an aspirator, after which the whole scrotum is painted with a thick layer of collodion, which is to be renewed every twenty-four hours. A cure results in from twelve to fifteen days. M. Broquet also has employed this treatment with success in three cases.—*Weekly Medical Review*.

THE PHONOGRAPH IN TESTING HEARING.

Read before the Chicago Medical Society.

BY GEORGE F. FISKE, M.D.,
OF CHICAGO.

It is certainly no exaggeration to say that scientific examination and treatment of the ear began with Anton von Troeltsch's method of using a perforated concave mirror reflecting daylight or artificial light into the ear.* It is also probably true that since that time, 1855, more time and labor have been spent in attempts to devise satisfactory hearing tests than upon any other question of otology. Aurists have clearly recognized this lack and have known just what they wished to accomplish.

To give a definition of normal hearing power one must consider the hearing with regard to intensity of sound, ability to hear loud or soft sounds, with regard to the pitch, and the tone, quality and also the distinctness with which rapidly recurring tones or noises can be separated by the ear. It is in consequence impossible at present to establish an absolute standard of normal hearing. Practically, three means of testing are used: the watch, or similar instrument; speech, whispering or loud voice; and musical tones, tuning forks or musical instruments. Any examination of the hearing to be satisfactory must include all these tests, and we have for each test a standard as normal, which is however not arbitrary, depending, as it does, upon the degree of quiet in the room used, upon the voice of the examiner, the age of the examined, etc. To illustrate: in testing with the watch it is not infrequent to find a young person who hears the watch at the normal distance while ordinary conversation is heard at the distance of three or four feet with difficulty. If then we employ the watch alone in examining such a patient it is easy to make a serious mistake in diagnosis and prognosis. Then, again, in examining a man over fifty years of age it is the rule that the hearing distance for the watch is very greatly reduced as compared with youth. It may be that the watch is heard only upon contact with the ear, while whispering and loud voices are heard at the standard distance. Much more rarely there is a great difference between the hearing of words whispered and spoken.

I remember the case of a man forty-three years old with no history of aural or nasal disease, who asked me to test his hearing because he chanced to be present while his daughter was being treated. He heard whispering at three feet in a room where thirty feet was the normal distance, but to my astonishment on changing to spoken words he distinguished them at the normal hearing distance; in this case forty feet.

Similar variations, which can perhaps properly

be termed physiological, present themselves in examining with the tuning fork, due in some cases to education of the ear as regards the limit for high or low tones. Now the voice is by far the most important of our tests, not only because it is more necessary in daily life to hear the human voice than any other sounds, but also because it is heard with more constancy through life, with less variation on account of age. But this, our most important means of testing, is also by far the most uncertain. Not only is it extremely difficult to reproduce exactly the volume and quality of a given voice, but the voices of different examiners vary so greatly that the patient's statement that he heard two years ago Dr. So and So's voice at such and such a distance would be in very many cases of no help to the present examiner. The watch can be made an accurate test by making a standard watch of a certain loudness, which shall be adopted by all aurists. Politzer's acoumeter and new hörmesser accomplish this fairly well at a moderate cost. It is also possible to measure very accurately the hearing for musical tones by using as standard König's graduated tuning forks and steel rods. One might perhaps nevertheless claim that the voice as at present used suffices for all practical purposes, and this is true as regards testing persons of normal hearing, or testing differences of hearing before and after extracting inspissated cerumen as well as before and after treatment in acute catarrhal and purulent middle ear disease. But we have to consider also the different forms of chronic middle ear disease.

Formerly—some years ago—non-suppurative chronic deafness was regarded as incurable, perhaps made worse by treatment, and the patient was dismissed with the statement that nothing could be done for him—that he would not get worse, or, again, that as his general health improved his hearing would return. The patient was thus turned over to the mercies of the quack or of the enterprising manufacturer of patent invisible ear drums, whose advertisements still grace our periodicals.

To-day many of these chronic cases are cured entirely; many are improved; in some the progress of the disease is arrested, in others delayed, while in some cases there is certainly no help from treatment and sometimes a more rapid decrease in the hearing following it. In all these chronic cases it is important to measure the hearing for speech.

It is remarkably true that chronic catarrhal middle ear diseases are amenable to treatment in inverse ratio to their time of progress. When the aurist is consulted in the early stages of the disease it is of the utmost importance to know and to make the patient know two things, 1, exactly how much the hearing is impaired as compared with normal hearing, and 2, whether there

is improvement or loss, however slight, between two dates, separated by a certain interval. Whether no treatment is given or change of climate advised or treatment directed to nasal catarrh or locally to the ear, it is of equal importance that such tests should be conclusive to the patient. This is however often impossible, when dependent upon the aurist himself. Aside from variation due to colds, age, etc., the patient places no such confidence in the physician's voice as in the test types of the oculist, hanging at the other end of the room, with the normal visual distance clearly marked upon them. Even with confidence on the patient's side and perfect conscientiousness on the physician's, it is impossible to reproduce with absolute exactness the words whispered or spoken—say one year after the first examination, and a slight mistake here might lead to a great mistake in prognosis and in treatment. At present records are of value only to the aurist making the examinations.

To sum up briefly we need a method of testing the hearing which shall 1, make use of human speech; 2, which shall be accurate and independent of the examiner; 3, which shall make a record capable of interpretation and use by other aurists.

It is believed that in the phonograph we have the only instrument which at present fulfils these conditions.

Prof. Lucae, in Berlin, has invented the phonometer, an ingenious instrument which measures the strength of expiration in speaking certain words. This fails in that it does not measure the clearness of articulation. Since the invention of the telephone many electrical acoumeters have been invented in which the tone is given by an electrical tuning fork, and the hearing distance for certain tones accurately recorded. Such instruments have been invented by Hartmann, Jacobson, Gradenigo and others; but they do not give articulate speech, which is an absolute necessity.

The thought that the phonograph would theoretically give the desired means of testing the hearing occurred to me long ago, as it has probably occurred to many others. It is, however, only recently that I have been able to use it in my own practice. In speaking in Berlin with Prof. Trautmann upon this subject he expressed the belief that it would prove useless in testing imperfect hearing because of the necessity of using a tube in the ear to transmit the sound, and because of the slight volume of sound. My own method of using the instrument is to dispense with all connection by tube to the patient's ear, measuring the distance in metres or feet at which the patient can repeat words previously spoken into a cylinder turning at a certain speed and then reproduced by the phonograph, the patient being placed at first beyond hearing distance and

then gradually brought nearer the instrument. I then record name of patient, date, and hearing record upon this same cylinder, either giving same to the patient or keeping it carefully put away. In addition to this voice test I test through a tube one meter long the softest whisper which the patient can distinguish. My attempts to use whispering to measure the distance in the same way as with the voice have failed for the reason that the hearing distance for the normal ear is only from one to two feet. My own experience has shown that Prof. Trautmann's objection as regards volume of sound is not valid, the phonograph reproducing words with such volume that the normal ear hears and repeats them at forty feet in a quiet room, thus giving good range for testing slight and moderate loss in hearing distance.

In testing patients having partial hearing, one heard loud whispering at fifteen feet, the phonograph at twelve feet; another the loud whispering at five feet and the phonograph at two and one half feet; a third whispering at three feet, phonograph at one foot. These and similar cases show what one would expect—that the human voice is heard relatively farther, by those persons whose hearing is imperfect, than its reproduction by the phonograph. Those patients who did not hear the whispering at all, did not distinguish the words of the phonogram, yet in such cases, where the loud voice is heard at two feet, one can test with the phonograph and the hearing tube. In case of those persons who hear shouting alone, or very loud speech, any accurate measurement of the hearing distance is almost impossible, and it is certainly not possible with the phonograph at present.

Among the objections occurring most forcibly to me during my work upon this subject the first was that it is not the human voice which is used, though a wonderfully perfect reproduction by mechanical means, and that the volume and quality of the voice lose in transmission. Yet the volume of sound is sufficient to give a range of forty feet to record differences in hearing distance, or more than the length of the room usually at the aurist's disposal, and the quality still permits of the recognition of a friend's voice. A new diaphragm still thinner than the one in present use is expected within a year, and this will undoubtedly add to the accuracy of reproduction and to the volume of tone.

The second objection was that the prepared cylinder, or phonogram, must in case of consultation be carried about by the patient and if lost, the record is lost. To obviate this I have in some cases prepared two cylinders, giving one to the patient and keeping one myself. The hope presenting itself to me before experimenting was that one person should speak into a cylinder and this cylinder be indefinitely reproduced by the electrotyping process, and fac simile phonograms be

used by all aurists possessing phonographs, as all oculists use printed copies of Snellen's types. In fact this process has been carried so far that five accurate copies have been made of a given cylinder, although at a very great expense, and Mr. Edison hopes to make indefinite reproduction practicable.

Thirdly, the objection occurred as to the possibility of variation in different machines. The chief points where variation in the part of the machine would make variation in the reproduction are the glass diaphragm and the sapphire needles. The glass diaphragms are three one-thousandths of an inch in thickness and both they and the needles are made as exactly alike as is possible to skilled machinists. I have tested this question practically by taking the same cylinder and using it in the same room on three different machines taken from stock at random, having the hearing distance controlled by another examiner whose hearing is normal, and by myself, and we could detect no difference in the hearing distance for the different machines. The possibility of the sapphire points being screwed in loosely or similar mistakes cannot be obviated, which is true of any instrument of precision.

Among less important objections are the cost, sixty dollars per year. Then the wearing out of the cylinder by use, which can however be neglected, as one cylinder has repeated thirty-four hundred times before becoming indistinct, while I have myself tested the same cylinder one hundred times with no discernible difference in clearness of tone. The time which is necessary for its use is also an objection to the instrument. This holds however only for the first examination; afterward no more time is necessary than in other methods of testing.

In using the phonograph it is desirable to have a room which is quiet—indeed, this is the only way in which uniformity can be obtained, and a second examiner make a comparison with the previous phonographic record, phonogram, brought by a patient. The instrument itself is undoubtedly familiar to you all. The only points of adjustment are the speed of the cylinder and the screw which, after a cylinder is put on the phonograph, enables the reproducing needle to fit exactly in the grooves in the wax made by the recording needle. Both adjustments are very easily made. In practice I set my own instrument at one hundred and twenty revolutions per minute, which speed seems to give the best reproduction.

In concluding I can only say that my own experience has satisfied me that my phonographic tests and records are far more reliable and accurate than any I have been enabled to make by any other method. And yet it seems to me equally certain that in the future this method of testing will be rendered still more perfect.

438 La Salle av.

THE CLINIC.

DIAGNOSIS OF AN ABDOMINAL TUMOR;
BROKEN NEEDLES LEFT IN WOUNDS;
PROSECUTIONS FOR ALLEGED
MALPRAXIS.

A Clinical Lecture delivered at the University Hospital, Philadelphia.

BY WILLIAM GOODELL, M.D.,
OF PHILADELPHIA.

The age of this woman is 43 years, she is married and has had eight children. I have not seen her before, and she has been sent to me by her physician for a diagnosis of her case. Her present ill health began after an attack of pleuropneumonia, with vesical disturbances, especially a burning and scalding upon urination. She still menstruates regularly and has no uterine trouble. But she complains that she has no appetite; that she always has a sensation of fullness over the epigastrium; that after eating she feels distressingly distended; that during the last four weeks, for no apparent reason, she has been losing flesh, and that there has developed in her abdomen "a swelling." "Swelling" is the euphemism she employs, because the word *tumor* has a hateful sound in every woman's ears.

As I look at this abdomen and gently percuss it with my finger tip, I see a wave travelling over its surface, and there is transmitted to my hand on the opposite side a very marked sense of fluctuation. Fluid being evidently present, the next question to be answered is this: Is this fluid free, or is it in a sac? If it were in a sac, it would lie in front of the intestines and I should have a dull sound on percussion, especially in the region of the navel and below it. But if the fluid were free, the intestines, as they contain wind, would float upwards on the surface of the liquid, and consequently give resonance on percussion. But on percussing now I find there is no dulness whatever, even at the most prominent portions of the abdomen. I think, therefore, that this fluid is free in the abdominal cavity. Yet in this opinion I may be mistaken; that is to say, the fluid may not have been originally free, for it may have escaped from a ruptured ovarian cyst. Yet if this condition had been caused by such a mishap, there would be the history of a sudden and serious peritonitis, or certainly of great peritoneal pain with more or less collapse; but upon inquiring I cannot elicit the history of such an occurrence, so that I still believe that this fluid in the abdominal cavity was free from the start and not from a ruptured cyst. Now this free fluid in the cavity of the abdomen comes usually from some disease of that great vital tripod—the liver, the kidneys and the heart. I shall start with the liver, as I am nearest to that organ. There is no enlargement of it, and no cirrhotic atrophy.

There is, in fact, nothing wrong with it in so far as I can make out, but not being a liver specialist, I may fail to detect some of its more recondite diseases. Nor can I find anything abnormal with the heart to explain the presence of this abdominal fluid. The urine has been carefully examined and proves that the kidneys are perfectly healthy. There is no history in this case of chronic peritonitis, so that up to this point I am at a loss to account for the dropsy.

This compels me to make an examination of the pelvic organs. The patient's nates are well drawn over the edge of the table, and her feet held by two assistants. I find here an enlarged womb, as well as a laceration of the cervix. But these lesions can have no bearing whatever upon the case in hand. The measurement of the uterus is plus three inches. I can find, then, no pelvic cause for her trouble; but she is very nervous and so incapable of thoroughly relaxing her muscles that my diagnosis is not complete. The only way to examine her satisfactorily would be to remove the fluid and then to exhibit ether, if the neurotic element were still in the way. However, before I tap this patient I shall hand her over to the Medical Department, in the hope that they may there either diagnose her case or remove this ascitic fluid without resorting to an operation. (The patient was here removed.) There is such a thing as a saddle-bag cancer straddling the spine and pressing upon the large veins which lie there. This will be readily discovered when she has been tapped. I did not say this in her presence because *cancer* is a forbidden word to a suffering woman, and I hardly knew how to explain my meaning by another euphemism.

PROLAPSUS UTERI AND METRITIS FROM CERVICAL LACERATION.

This woman has had three children and all of her labors were natural. She complains of having had leucorrhœa, pelvic pains and backache since the birth of her first child. Dr. Taylor tells me that she has had a bad cervical tear and also a cystocele; but upon the latter I shall not attempt to operate today, as I have not the time.

I ask the question: Why does this woman suffer so much pelvic pain? The trouble began primarily in the laceration of the cervix, which by keeping up a source of constant irritation invited an abnormally large blood supply to the part. The result of this overflux of blood is well expressed by the single word, hypernutrition. The weight of the uterus being thus increased, it became displaced and pressed abnormally upon adjacent structures, which could not bear the weight without resenting it.

She is now put in Sims' left lateral position and when the speculum is introduced the vagina is ballooned up by the air's rushing to fill up the

vacuum. I then take a stout shoemaker's thread and pass it through the cervix, in order that I may by this means draw the uterus down to within easy reach. The laceration, which is red and angry looking, presents some degree of ectropion. The sound gives a measurement of plus three inches. Taking hold of this string, I hold the organ in position while I denude the lips of the old laceration on either side, taking care to leave on each lip and opposite to each other ribbons of undenuded tissue in the middle where I wish to make my future os and cervical canal. This bad tear which those of you who are on the front benches can readily see, is what used to be called an "ulceration of the womb," and is still so called by some physicians who compose the rear-guard of our profession. I am often at my wits end to know what I should bring before you in the way of an operation. If I have one like this—which is almost concealed from view—very few of you can see what I am doing. On the other hand, if I do a laparotomy, which all of you would be able to see, the operation is one which most of you would and should never perform. Yet you must see the larger as well as the smaller operations, but I generally reserve the latter for the ward classes, which being limited in numbers, can see every step of the operation. Therefore, at our next clinic I expect to remove, in this amphitheatre, a large solid fibroid tumor of the uterus, and the week after a very large and diseased kidney. I have reserved them specially for these occasions because the operations will be visible to all.

I am not left-handed, but by resting my elbow on the table I can use my left hand pretty well in working with this long handled knife, which I prefer to scissors. Scissors do not cut so smoothly as a knife and, therefore, do not leave a wound, which can be so perfectly coaptated. The cervix was so soft, large and angry looking that I feared pregnancy, until I had made a careful examination into the case. But as a result of this condition there is an unusual loss of blood, from this operation which is generally comparatively bloodless. Having denuded all the torn surfaces, and having left a narrow undenuded ribbon in the middle of each lip, I am now ready to sew it up. The needles for this operation should always be so tempered that they will bend before breaking, otherwise they will be liable to break off in the hard cervix which is sometimes as tough as sole leather. When once they break off it may be impossible to find the fragment without an injurious dissection of the parts. Not long ago I casually heard that a skilful surgeon in a distant city was about to be sued for \$10,000 damages, because it was accidentally discovered by another physician that the former had left a piece of broken needle in a perineum which he had repaired.

I accordingly wrote to this brother in distress

that, if my evidence could help him out of his difficulty, I should be glad to furnish it. For I had more than once left at least half of a needle in the cervix and at another time fully an inch of a large needle in the perineum. These patients are perfectly well and to this day do not know that they are carrying portions of surgical instruments in their bodies. I also recalled to him the fact that many hysterical girls have with impunity converted themselves into human pin-cushions by swallowing innumerable needles, which have travelled all over the body and been extracted at places very remote from the stomach. I presume there is not a surgeon, who has not broken needles and left a fragment in his patient's body, without the slightest mischief accruing. When one can tie, as many have, the pedicle of an ovarian or uterine tumor with iron or silver wire and drop it into the abdominal cavity to remain there until doomsday; or when we get broken bones to knit by uniting them with strong iron wire; or when one can leave for weeks, as I have done in chronic peritonitis, a glass drainage tube in the highly sensitive and vulnerable abdominal cavity; surely a needle in the cervix or one in the perineum can do no more harm than an earring.

But these attempts to prosecute a physician on the slightest provocation, have made me very cautious. For instance, I never perform an oöphorectomy, without explaining in the presence of competent witnesses, why I wish to perform the operation and what will be its results. A very unfortunate English physician neglected this precaution, and as the result lost money, health and an enviable hospital appointment, although he won finally at the end of a protracted, expensive and most worrying suit at law. The husband complained that his wife was unsexed; the wife, that she was not told what the nature of the operation was to be; the narrow-minded directors of the hospital, that the surgeon had operated without calling in counsel.

Let me give you one of my experiences: Not many years ago one bitter cold day in winter a poor man came to my office from a town several miles distant in a neighboring State, begging me to come to the aid of his wife who had been long in labor and could not be delivered.

It was in the midst of my office-hours, the weather was very cold, the fee offered was not a tempting one and I requested him to go for some one else. But he begged so hard that for humanity's sake I could not refuse. When I got there I found that his wife had a shoulder presentation, and had been attended by four physicians, who each in turn had tried in vain to turn the child, and deliver her. They were all present and as the question of embryotomy had come up they had sent for me. The woman was much exhausted, and we all felt that her only chance lay in a speedy delivery. She had been kept more or less

under ether for hours, and a little more was now given her. Knowing that the womb had moulded itself to all the irregularities of the child, which moulding had prevented version I concluded to try a wrinkle of an old French accoucheur whose name I have forgotten. It was this: I caught hold of the hand of the shoulder which did not present and made traction on it. This manœuvre turned the child over, on its long axis, and extricated its body from the uterine mould which had "set" around it like a cast of plaster. I was then able very readily to make podalic version, and to deliver the body as far as the head. But here an unexpected difficulty occurred, one which I have never met with before or since. The long irritated cervix or the lower zone of the womb closed like an iron collar around the neck of the child and imprisoned the head. While I was trying to release it, the woman suddenly and unexpectedly died. All this occurred within a very few minutes.

I shall not describe the scene that followed; it was a very painful one. My only consolation was that I had done my duty. Now, would you believe it! A few days afterwards each one of the physicians present, including myself, was notified that a suit for malpraxis had been instituted against him. I put my case in the hands of a lawyer, who gave me a letter to a leading citizen of that town, asking him to stand bail for me in case I should be arrested, as I might be at any time when called there on a professional consultation. For, of course the plaintiff would be only too glad to arrest me and try me in his own State. For months I carried this letter in my pocket, but I never had to use it, for when the matter came to the pinch we all showed such fight, that the case was abandoned. This is the second time that I have been threatened with a prosecution for alleged malpraxis; but in it I also more than met the plaintiff, and that case was also abandoned.

In this relation let me tell you what I read in the daily papers the other day, showing how careful we all should be to surround ourselves by safeguards: A physician in Belgium, in a case of necrosis of the leg of a child warmly advocated excision of the dead bone. The mother said she would give her consent as soon as the grandmother was willing; but it took the old lady exactly one year to make up her mind. Her consent being obtained, the child was etherized and the diseased bone laid bare; but it was then found that the necrosis had proceeded so far during the year that it was impossible to save the limb. Accordingly, the surgeon assumed the responsibility of amputating the leg. He was sued by the father and had to pay him 10,000 francs for damages.

In this country, surgeons of note were often prosecuted for the unavoidable shortening of fractured long bones, especially of the thighs,

during the process of repair. Indeed, if I am not in error, even the late Prof. Samuel D. Gross, with all his reputation, had to stand a suit for malpraxis. But this is becoming more and more rare, because the community is getting more and more intelligent. The practical lesson that I wish to impress upon you all, by citing these examples, is simply this: that if the public presumes to attack the professional characters of men who are your medical teachers, how careful you should be in all important cases to guard yourselves by calling in older and more experienced advice—and by getting the responsibility shared.

Again; never say there is absolutely no danger whatever in any operation or in any surgical procedure. On this point some years ago I got a bitter lesson: I was asked by a patient, upon whom I was about to operate at one sitting for a laceration of both the cervix and the perineum, whether there was any danger to be feared from the ether. I laughed her to scorn and called it the child's play of the operation. But mark the result: both operations were performed and very satisfactorily too, but as the lady emerged from ether-narcosis, incessant vomiting set in which could not be controlled by any means known to me, or to a consultant whom I called in. On the fifth day she died from heart failure, from this very etherization from which I said there was no danger. Therefore, I now never tell a patient that there is no danger whatever in any operation.

So take this lesson home with you to day: Never to promise too much to your patients; for as you are not sure what the day will bring forth, you certainly never can be sure what an operation may bring forth.

MEDICAL PROGRESS.

IMMUNITY AND INFECTION.—These conditions have recently attracted marked attention from Continental writers, especially in Italy and France. Numerous theories have been advanced, none of them can be said to have been wholly satisfactory, or to account for all the varying and apparently contradictory facts.

CHARRIN et ROGER (*Contribution à l'étude expérimentale du surmenage. Son influence, sur l'infection. Arch. de Physiol.*) have made some experiments regarding the effect of fatigue upon infection, upon lines laid down by Solowieff, who demonstrated upon horses and men that great fatigue favored the development of certain infectious disorders. In their experiments animals were employed, that had been exercised in a revolving drum. The reaction of different species to this treatment was found to vary greatly, rabbits and guinea-pigs soon presented evidences of pain,

fright and vertigo, that were soon followed by a fall of temperature and death. Dogs, cats and white rats bore this extreme exertion without special disturbance, and after running twelve hours in the drum would be in a normal condition the following day.

In the first experiment thirty-six white rats were inoculated, part with a weak culture of anthrax and part with the bacillus of "charbon symptomatique." Twenty-one of these animals were placed in the drum and allowed to run from two to eight hours, the remainder were reserved for control. The results in all the experiments were nearly equal, the animals that were fatigued died in less time than those which were allowed to remain quiet; in some instances the animals that were allowed to rest would survive the infection—the others invariably died.

THERAPEUTICS OF GASTRIC DYSPEPSIA.—M. GEORGES contributes (*Revue Médicale de l'Est*, September 1, 1890) a paper on this subject, based on a number of experiments he has made on the relative digestive powers of natural and artificial gastric juices. Cubes of hard-boiled white of egg were placed for a certain length of time in an artificial gastric juice containing HCl and pepsin in varying dilution. He finds (1) that to effect a speedy and satisfactory digestion of hard-boiled egg or of roasted and raw meat it is necessary to use a gastric juice containing a large quantity of HCl and a minimal quantity of pepsin. (2) The hydrochloric acid ought to be employed sufficiently dilute; a 0.4 per cent. dilution appears to be preferable to one either weaker or stronger, such as 0.1 per cent. to 0.2 per cent. or 1 per cent. (3) The best proportions of HCl (0.4 per cent.) and pepsin are about 5 cubic centimetres of acid to 2 centigrams of pepsin. (4) It is necessary to employ the artificial juice thus made in sufficient quantity to obtain the best result. Thus if the above proportions of acid and pepsin be taken as the unit, it may be said that the digestive power of the juice increases with the quantity employed, and that the increase is in the proportion of 12 to 8. This only applies, however, within certain limits. A combination of 40 cubic centimetres of a 0.4 per cent. solution of HCl with 8 to 10 centigrams of pepsin gives the best results of all. His observations on the digestive capabilities of natural gastric juice were made on 142 specimens taken from 69 patients. In 8 cases of "chlorotic anæmia" the contents of the stomach were found on eighteen occasions to have no digestive power at all; on two occasions they possessed a slight power; and on one occasion digestive power was normal. In each of these cases the addition of pepsin failed to modify the digestive action; in one instance, indeed, it appeared to delay it. The addition of HCl, on the contrary, had a very marked effect in 12 cases,

but was without result in 8 cases. Of all the degrees of dilution employed, 0.4 to 0.6 per cent. of HCl gave the best results. In 9 cases of gastric ulcer the digestive power of gastric juice was found to be excellent on nineteen occasions, and absent altogether on ten. In these ten instances pepsin was found to be hurtful in its action on three occasions, while HCl (0.4 per cent.) restored the digestive power on six occasions. Analogous results were obtained in 92 specimens of gastric juice obtained from 52 different cases, including such affections as tabes, catarrhal jaundice, acute and chronic gastritis. In 87 of these 142, the gastric juice was without digestive power. The addition of HCl (0.4 per cent.) proved useful in 16 cases, while pepsin entirely failed, even impeding the digestive process on twelve occasions. The result, therefore, of the observations on 142 samples of gastric juice was that 115 were found without digestive power. In all these cases pepsin had no action, appearing sometimes to be even hurtful (sixteen times). The conclusion he draws from these data seems, then, justified—namely, that pepsin is useless where the dyspepsia is due to some primary or secondary disturbance in the gastric secretion, while hydrochloric acid can be used with advantage in such cases. A further series of observations on the digestive power possessed by various medicinal preparations containing as their basis hydrochloric acid, pepsin, pancreatin, or papain, showed that they were without action in all cases; they did not facilitate digestion either in the case of artificial or of natural gastric juice.—*Brit. Med. Jour.*

THE DISORDERS OF SLEEP.—In a recent article DR. WEIR MITCHELL devotes himself to a consideration of a topic of more than ordinary interest—the disorders of sleep. Our text-books usually contain brief and unsatisfactory chapters on sleeplessness and its treatment, but further than this they seldom go; yet sleep is infested by a multitude of derangements whose uncertain pathology has hitherto rendered their classification very imperfect.

The little actually known regarding the nature of sleep, has perhaps tended to keep in abeyance speculations regarding the disorders that accompany the somnolent state; for in addition to the fact that the sleeping brain contains less blood, or that the blood within it circulates more slowly than in the brain awake, we know nothing, and can only affirm in a general way, that sleep is a condition of the nerve cells, a definition even less satisfactory than that given by Sidney Smith to the person who asked him what an Archdeacon was, when he replied that an Archdeacon was a person who performed archdeaconal functions.

The periods before and after sleep are often found to be states of unusual liability to halluci-

natory disturbances. These periods Dr. Mitchell has, for convenience, termed the prædormitium and the post-dormitium. Baillager, whose brilliant researches have covered every region of delusional manifestation, found that hallucinations in the prædormitium were exceedingly liable to be prodromes of an outbreak of insanity. In the half-conscious state the control of ideas is lost, and fantastic shapes crowd upon the mind as the outcome of external sensory impulses.

Another derangement, perhaps allied to the intellectual disturbances just mentioned, is an emotional derangement, which consists in an intensely aggravated sensation of fear. This seldom occurs in the prædormitium and generally follows a sleeping period. Faulty digestion may contribute something to this, and the painful emotion may be the subjective interpretation of visceral impulses, as the emotion appears without traceable parentage in dreams or sensory illusions. More frequent in occurrence than this, is the condition known as "the fidgets," where the patient, filled with all manner of unreasonable fears, is a prey to perpetual unrestfulness.

Another peculiar sleep disorder is sleep-lessness or nocturnal paresis or paralysis, which differs from all similar paræsthesiæ, being unlike those of neurotic, anæmic, gouty or asthenic origin. Some have deemed this paræsthesia to be connected with a subsequent attack of diabetes. First thoughts would naturally revert to excessive overwork or tobacco as responsible for this form of paralysis. Dr. Mitchell, however, appears convinced its origin is central.

Sleep-ptosis or palsied eyelids is another disorder allied in character to these just noticed. Dr. Mitchell reports two cases. The patients awake with palsied lids; when opened they close again. This is one of the night palsies of temporary duration.

Sleep-pain is a frequent hysterical symptom. Any one, however, who has suffered from the leg-ache peculiar to sleep, will realize that pain can certainly persist throughout the sleeping period.

Sleep-jerks of choreic character are among the most common phenomena when the motor area is involved. These are more frequent than tonic spasms, which are manifested but rarely.

The whole subject of sleep disorders is one of great interest, and deserves to be patiently and carefully studied.—*Physician and Surgeon.*

DIETETIC MANAGEMENT FOR DIGESTIVE DISTURBANCES IN CHILDREN.—DR. G. RHEINER, in *Wiener Klin. Woch. (Therap. Monatsh.)*, warns above all against beginning the treatment of digestive disturbances in children with drugs; the dietetic management is and will remain the most simple, as well as by far the most rational. A child that manifests moderate gastric disturbances

shortly after being weaned, should again be nourished from the breast, in order to quickly relieve it from its digestive difficulties. In cases of gastric dyspepsia occurring in bottle-fed babies, Rheiner warmly recommends washing the stomach, as introduced by Epstein, of Prag. After this procedure the digestive powers of the stomach will probably remain weak for a few hours, and for a short time it will be necessary to replace the water lost by the body by a suitable diet. As such, albumen and water (the white of an egg to a pint of water), barley water, or a very weak infusion of tea, suggest themselves. In intestinal dyspepsia we should carefully guard the stomach against disturbing influences. For this reason anti-diarrhoeal mixtures should not be at once administered; we should rather order an exclusive diet of milk and barley gruel to a suitable proportion of water. Here the constipating qualities of barley gruel are valuable as compared with oatmeal gruel; the latter, used in constipated infants, will, as a rule, bring about two or three loose evacuations per day. In closing, the author emphatically remarks that in many cases we can get along altogether without drugs.—*Weekly Medical Review.*

THE FUTURE OF DERMATOLOGY.—In the Dermatological Section of the meeting of the British Medical Association of the current year the address was made by JONATHAN HUTCHINSON on the above subject.

The object of his address was mainly to point out the value of dermatology as a field for clinical observation, and as a department of general medicine.

He showed what the laws were which governed the study of dermatology, and how rich a field it formed for the student. The aim of all true-hearted specialists was to break down the walls of specialism. He referred in illustration to the instructive nature of the group of maladies known as herpes, and the peculiar influence of arsenic upon it. Despite the etymology of its name, no true herpes ever creeps or spreads in the least. What was seen in a large majority of disorders of the skin led to the belief that common inflammation, however produced, was more or less infective. His belief was that it was possible to exaggerate the importance of the doctrine of the infectiveness of common inflammation.

Treatment should rather be aimed at the repression of local inflammation, and at preventing dissemination by infection. He referred to the action of inheritance on skin diseases, and said that Kaposi's disease was one of the best examples of "family disease," which he said simply seemed to be the inheritance of a skin that would not bear exposure to sun and air. Then, again, the battle of the hypothesis of cancer would have to be fought out on the skin, and rodent ulcer

might indeed, by itself alone, form an epitome of our knowledge of the subject. In melanosis the picture was completed, and the infection of the blood was seen in its fullest energy. He next referred to the opportunities offered in connection with skin diseases for the study of therapeutics and for observations on the action of drugs. Arsenic, of course, stood foremost among those concerning which we have collected important and even astonishing facts.

There was no more wonder-producing fact in the whole range of therapeutics than the ease and rapidity with which arsenic contracts and cures common pemphigus. There may occasionally be exceptions, but, as a rule, not another bulla appears after the remedy has been commenced. We have, indeed, ceased to see any cases of "chronic pemphigus" since this fact has been made known. How the drug acts we know not, neither do we know the real nature of the malady which we cure. It does not always cure it, but it always changes it for the better. He who would unravel all the mystery of how the bullous eruption may be cured and the scaly one changed, how the skin may be made to clear up in one case and muddy and brown in another, how peripheral neuritis may be produced to end finally, unless prevented, in some severe form of paralysis and death, and how in rare instances the nutrition of the skin may be so influenced that keratosis and even cancer may be the result, will certainly find that he has his work cut out for many years.

In the study of dermatology he pointed out that we have in the first place to avoid narrowness and specialism, and in the second place to develop to the utmost our knowledge.

Only the foundation of the subject has as yet been laid.

More minute examination was needed in every direction, and the careful examination and record of clinical facts exactly alike.

All possible aids must be invoked.

The microscope, the photographic camera, the artist's pencil, but, above all, the trained eye and the pen of the skilled and patient observer, must be brought into full use. No one can make the attempt to classify skin diseases without soon perceiving that many well-recognized forms claim a place in more than one group. We are engaged in a very different task to those of the zoölogist or botanist, though, after all, the differences are only in degree, and they encountered the same difficulties, only to less extent. They, like ourselves, have to recognize connecting links, hybrids, and mongrels. In order that dermatology should prosper as a part of medicine, it is essential that we should learn to use our names lightly. Nothing has more impeded the progress of dermatology, nothing makes its study more repellant to the student, or its knowledge more difficult of attainment, than the habit of giving an

arbitrary name to every little group of phenomena, treating that name as if it represented a substantive and isolated reality, and insisting that the facts of disease should be made to group themselves in accordance with our conventional nosologies.—*The Lancet*.

PLEXIFORM NEUROMA.—E. LACROIX and P. BONNAUD (*Arch. de Méd. Experimen.*) describe the case of a lad 12 years of age that for the past six or seven years presented a slowly enlarging growth upon the left shoulder. The tumor was not painful, the skin movable, pigmented, and sensibility lessened. The tumor was readily movable upon the subjacent tissues, and presented a general appearance like that of an inflamed varicocele. The operation revealed a mass of fibres varying from a thread to a feather-rib in size, and extending between the muscular septa. Microscopic examination showed the tumor to consist of mostly hypertrophied nerve fibres, the nervous elements as well as the connective tissue participating in the hypertrophy. It was connected with nerve bundles and simply consisted of an enormous number of Remak's fibres, with here and there a fibre presenting the medullary sheath.

EARLY DIAGNOSIS OF KIDNEY TUMORS.—M. GUYON believes that surgical intervention is indicated, both for diagnosis and treatment, when characteristic hæmaturia and pain distinctly localized in one or other loin are met with, and in his opinion the time when the tumor is perceived must not be waited for. The cystoscope, though of service, is a defective means of diagnosis in his experience, and fails to declare which is the affected kidney. *Periodic* microscopic examination of the urine is needful before deciding that hæmaturia is absent.—*Annales des Maladies des Organes Génito-urinaires*.

RAPID DILATATION OF URETHRAL STRICTURES.—DR. P. SETTER reports the following modifications of Le Fort's method, as practiced in Brun's clinic. After induction of anæsthesia a filiform bougie is passed through the stricture. A well oiled catheter is then screwed to the bougie and carefully inserted, using the latter as a guide. The dilatation is kept up from five to fifteen minutes, after which the catheter is withdrawn and replaced by one of larger calibre. This is followed by a third and fourth, and if the resistance is not too great, the largest sized instrument can be introduced. This method is contra-indicated in tight strictures where too much resistance is encountered, in cases where the urethra is very sensitive, and finally in cases where rapid relief is required. Aside from these, the method is excluded in comparatively wide, or in impermeable strictures.—*Centralbl. f. d. Gesamte Therapie*.

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PROFESSOR KOCH'S NEW REMEDY.

No other event produced an impression so profound in the vast assemblage of medical men at Berlin, as did the reading of a paper by DR. KOCH, in which he stated his definite conviction that not only had the bacillus of tuberculosis been identified, but that he had in hand the remedy for its control. It had been his purpose before its publication to subject it to a most thorough testing, and in every particular to perfect the details for its use. But a discovery of such untold value could hardly be held in confidence. The public press had already contained such exaggerated statements that at the urgent solicitation of his friends, rather than from his own inclination, he was induced to present to the International Congress a preliminary paper upon his treatment of tuberculosis. He then intimated that as soon as his investigations should be in some measure completed he would more fully communicate to the world the facts with reference to his discovery.

In the *Deutsche Medicinische Wochenschrift*, of November 15, his second communication is published. No one who peruses this article can fail to appreciate that if his clearly expressed convictions shall be fully realized, it will prove the most important communication ever given to the world by human hand.

We mark with utmost satisfaction the candor with which he gives expression to his belief and we by no means hold him responsible for the head-

long conclusions to which some of his followers at once attained. Since the meeting at Berlin he has summoned to his aid a number of eminent men whose names are a guarantee for the fidelity of their work, and in connection with his paper we also find the statement of the results of their individual work, all strongly confirmatory of his claim.

In reading his paper we confess to a disappointment at the outset from the fact that he still declines to divulge the nature and physical character of his new remedy. In the absence of the material facts, it is not within our province to criticise. We cannot believe that a name destined to be so illustrious, and a remedy—if such it shall prove—of such inestimable value shall be degraded to the service of mercenary ends and freighted with shekels.

The remedy is described as a brownish transparent fluid not easily decomposed, of which a cubic centimetre of a 1 per cent. solution is a dose, to be introduced by hypodermic injection preferably upon the back of the patient between the shoulder blades, in which location it produces less reaction and causes less pain. Human patients are found to be far more susceptible to its influence than are the animals generally used in making experiments. Thus it was found that while a guinea pig would readily tolerate the injection of two centimetres of this fluid, one-eighth of that amount would produce intense effects in a healthy man.

With reference to those effects he states that in persons in health or subject to other than tuberculous diseases, hardly any special result is observable, and that this fact will be of special diagnostic value. The reaction which follows the introduction of the remedy usually begins some four or five hours afterward and lasts from twelve to fifteen hours, sometimes later and with less intensity. It begins with rigors and with fever, pain in the limbs, coughing, fatigue and vomiting. The patients recover promptly from the attack and express themselves as feeling better than before. Of course the therapeutic effects are those that most concern the medical man and the welfare of mankind. One thing he says is certain, "there is no question of a destruction of the tubercle bacilli in the tissue, but only that the tissue enclosing the tubercle bacilli is affected by the remedy." Necrosis of infected

tissue results and its removal must be sought. He reaches the conclusion that patients become more and more tolerant of the effects of the remedy as they are less and less affected by tubercular disease until, in the absence of effect, we may infer that they are cured. The remaining portion of his communication deals with the application of the remedy in lupus, in tuberculosis of the bones and joints, in phthisis and to its effects on advanced cases of that disease.

A large portion of the next issue of *THE JOURNAL* will be surrendered to the presentation of the paper of Dr. Koch entire, and to the recorded observations of those associated with him in his investigations. Medical men throughout the world will wait the verifications of results, here claimed, with interest most intense, and if in any measurable degree our hopes shall be realized, this work of Dr. Koch will mark a most signal epoch in the world's history.

JUSTICE TO THE DEAD AND THE LIVING.

A considerable amount of attention has recently been directed to the possible extinction of traces of criminal destruction of life, through the methods now in vogue among funeral directors and their agents for the beautification and preservation of the corpse for burial. One of the chief objections urged against cremation has been that the evidences of willful murder might be incinerated with the body, and medico legal investigations thus be set at naught. Certainly the same wholesale obliteration of the direct instrumentation of crime must occur, when the undertaker, as soon after death as in his wisdom sees fit, injects into the vessels and into the stomach of the silent victim, a liquid mass of potent chemical ingredients, for embalming purposes, which must inevitably affect or completely change the composition of any poisonous agent that may have been introduced during life for nefarious purposes. There is a prevailing tendency, at any rate, to relinquish into the hands of these representatives of a necessary but often unwelcome fraternity, the bodies of our dear ones, too soon after death, without question as to the treatment or consideration they are likely to receive; and embalming for burial is one of the processes of personal adornment of the corpse, which tickles the fancy of the thoughtless, but frequently

makes the judicious grieve. That is a sentimental view of the question, however, which we need not pursue further.

As a matter of medico-legal interest, it is our duty as medical men to interpose some check to this fashionable folly, to say the least of it; but also, to put it more forcibly, to inhibit, by some, severe legislative restriction, a practice that will, sooner or later, in some important criminal case, interfere seriously with the detection and punishment of guilt. Toleration of such procedures is almost equivalent to direct encouragement and sanction of them.

THE QUESTION OF THE REMOVAL OF THE JOURNAL TO WASHINGTON.

While, at the meeting of the Board of Trustees which was recently convened in Washington to consider this subject, some were in favor of such change and of immediate removal; to others it seemed a matter of such moment as to require not only careful consideration and deliberation before action, but that upon a question so important the views of the entire Association should be had, and that the decision of its members, rather than a vote by the Trustees, should govern.

The proceedings of the meeting of the Board will be found in this number of *THE JOURNAL*.

The responsibility for such action will devolve upon the membership, and at its next meeting the Association will doubtless decide the question. Editorially *THE JOURNAL* will not pass upon the question nor seek to influence those whose judgment must be final.

EDITORIAL NOTES.

FAITH CURE IN A NUTSHELL.—A very pithy statement—only a little short of being an aphorism—has been contributed against the validity of the proofs that organic disease can be removed by the faith process, as follows: "Clear medical testimony would *compel belief*, but the vague statements of the cured only *confirm doubt*." This striking antithetical declaration is by the pen of a layman, in the English journal, called *Regions Beyond*, devoted largely to missions in Africa. So far as the world at large is concerned, one or two good, clear medical certificates that organic troubles have been cured, would set the question at rest forever. The difficulty is, of course, to

get them. As an example of the kind of cure the cured patients themselves are content to report, we may point to the case of a man of some prominence having organic eye disease, said by the patient to have been cured by the prayer of faith; but if a cure was effected it must have been done without a restoral of vision as a proof, for the man was never able thereafter to read a single line, any more than he could before he was "healed." He is said to be in an expectant attitude, believing that so soon as the strength of his faith is what it should be, he will be able to use his eyes for vision. And yet he continues to maintain that he has been healed. The testimony of such minds must indeed "confirm doubt" among all thinking people.

NOTES FROM A PARIS CORRESPONDENT.—Professor Koch, whose reported discovery of an effective cure for consumption has attracted so much attention, will probably ere long exchange his chair at the Berlin University for a professorship devoted entirely to the study of bacteriology. He will thus be enabled to carry out his desire to apply himself wholly to the study of zymotic and infectious diseases, including not only cholera and tuberculosis, but also typhus, anthrax, diphtheria, and similar affections.

Dr. Liebreich, an eminent Professor of Therapeutics in the University of Berlin, in opening his winter course of lectures recently, dwelt on the enormous importance of Prof. Koch's investigations. He pointed out that in all remedies for disease there are two equally important groups, viz.: those dealing with causes and those dealing with symptoms. The most interesting thing about Dr. Koch's discovery, he said, was the fact that the process of cure he proposes is founded on a knowledge of the nature of the tubercle bacillus, that is, of the cause of tuberculosis. Dr. Liebreich hopes that the further application of Dr. Koch's method will greatly facilitate the effective treatment of infectious maladies of all kinds.

Numbers of persons suffering from consumption have already applied to Dr. Koch with a view to his method of cure being tried on them, but the reply they have received is that the treatment cannot at present be carried out except at Berlin, and not in hospitals, but only privately.

The well known medical authority, Prof. Schröter, of Vienna University, claims to have discov-

ered, quite independently of the Berlin Professor, R. Koch, a cure for tuberculosis. He has engaged to give a detailed explanation of his remedy at the meeting of the Vienna Society of Physicians. The preparations he employs in curing the disease are said to consist of compounds of prussic acid.

THE PHONOGRAPH IN PRACTICAL INSTRUCTION REGARDING PULMONARY DISEASE.—Dr. J. Mount Bleyer, of New York City, has been carrying on some experiments with the phonograph as a means of recording the various coughs and other sounds emitted by diseased throats and lungs, also the voices of singers when in abnormal conditions. As an instructive object lesson in diagnosis these recorded signs upon the phonograph may be useful as a uniform demonstration to classes of students, from year to year; uniformity being a feature of practical teaching that has never been aimed at because impracticable, if not impossible, in the days before the "sound writer" came into use. As a means of drill to those whose sense of hearing has not been quickened by previous musical tuition, the phonograph may prove very useful.

WHENCE THIS NAME?—The South Carolina "Redbones" have been thus described in an interview with Senator Hampton:

"There is a singular race of people in South Carolina called the 'Redbones.' Their origin is unknown. They resemble in appearance the gypsies, but in complexion they are red. They have accumulated considerable property and are industrious and peaceable. They live in small settlements at the foot of the mountains, and associate with none but those of their own race. They are a proud and high-spirited people. Caste is very strong among them. They enjoy life, visit the watering-places and mountain resorts, but eat by themselves and keep by themselves. When the war broke out several of them enlisted in the Hampton Legion, and when the legion reached Virginia there was a great outcry among the Virginians and the troops from other States because we had enlisted negroes. They did not resemble the African in the least, except in cases where Africans had amalgamated with Indians. This intermixture, which is common in the Carolinas, produces marvellous results. It takes the kink out of the hair of the African, straightens

his features, and improves him in every way except in temper. These Afro-Indian people are devils when aroused, and as slaves were hard to manage."

DR. GUSTAVE MONOD, some time Professor in the Faculté de Médecine, Paris, died on October 16, at the age of 86. He belonged to a highly respected family of Swiss origin, several members of which have been prominent pastors in the French Protestant Church. Dr. Monod leaves a son who is an *agrégé* of the Paris Medical Faculty and surgeon of the St. Antoine Hospital.

CHARCOT'S JOINT DISEASE IN AUSTRALIA.—At a medical meeting in Sydney, N. S. W., was brought forward the first and only case of that affection clinically examined in Australia. The patient, according to the narration in the *London Medical Recorder*, October 20, was a Frenchman by birth, aged 39 years, and was presented by Dr. Scott Irving of the University of Sydney. The affected joints were those of both hips and the left knee. The case attracted a lively interest among the medical men present, and a desire was evinced to become familiar with its salient diagnostic points. The case appears to have been a most typical example of the disease, and a history of syphilis eighteen years previously was given in connection with it.

MEDICAL MISSIONARY CONVENTION IN CHINA.—The medical missionaries residing in China had a conference or convention at Shanghai last May. It lasted three days and the meetings were full of interest. There are reported to be 101 medical practitioners at work in various parts of that country, 34 of these being women. One or more missionary hospitals are inaugurated every year.

A SANITARY SERVICE FOR THE RED SEA.—Premier Crispi, of Italy, has just caused to be distributed to the representatives of Italy in foreign countries a circular, in which he proposes the convening of an International Commission with a view to institute a sanitary service for the Red Sea. He suggests that two international sanitary offices be established, one for the medical visitation of ships which enter the Red Sea from the Indian Ocean, and the other for that of ships which pass from the Red Sea to the Mediterranean. Another proposal in his circular is to the effect that in connection with each of the two

offices should be instituted an international sanitary station, where the ships must put in for disinfection when found to have cases of infective disease, actual or suspected, on board.

JENNER AND KOCH.—It is interesting to note the increased respect now paid to the memory and struggles of Jenner by those who are led to write hopefully of the discovery of Koch. One of our daily contemporaries gives a pithy summary of the reception ordinarily accorded to our great medical benefactors, a part of which is worthy of quotation here: "Small-pox was once even more prevalent in the world than consumption is now and scarcely less deadly. It held the position that its practical eradication has given to phthisis. But a physician found a means to fight it so effective that now many doctors in twenty years of practice never see a case. It is likely to become a medical curiosity. Yet this remedy was reviled, and the man who discovered it was denounced in his day as a charlatan and an impostor. This should at least warn the revilers not to be too hasty about Koch.

"That also was the story of a microbe made nearly harmless by the discovery of how to get at him. Jenner, it is true, did not know there was a microbe. Nearly every phase of his discovery was empirical. It was the same with the great discovery that overcame the palludal fevers. The Spaniards learned from the natives of Peru that fever could be cured by drinking the water of certain ponds around which grew the cinchona trees, and it is likely that these ponds were simply solutions of quinine. It is a great part of the function of science in such cases to give us reasons for what we already know, but Koch has reached his conclusions by strictly scientific stages. Can men of science regard his discovery as less valuable on that account?

"All the great discoveries, however, have passed through the same phases. Some deep thinker labors patiently for years, consumes his days and nights in difficult and baffling experiments and at last makes his way to the light. He is at that period the one man in the world who alone possesses all attainable knowledge of the subject. His discovery is welcomed at first in that spirit of enthusiasm for great things which is the best impulse of the common mind. But soon the doubters are heard from. The smatterers—men who

give hours where he has given years of study—come to the front to belittle his labors. There is, nevertheless, a scramble to realize the advantages. *Haste, incapacity and confusion coöperate to do harm. His method is applied in erroneous ways,* the promised results are not obtained, the discovery is discredited and all seems to end in a grand delusion.

"But happily that is not the real end of the story, for the silent and honest workers continue and the good makes itself felt. It will be thus with Koch's discovery. The charlatan clamor and activity that swarm to the front when fortunes are to be made do their little harm and die away, and when these clouds pass the world *will find that it is the richer for a great and effective remedy against a terrible disease,* and in this all the people have good reason to rejoice."

THE prize of one hundred dollars offered by the American Association for the Study and Cure of Inebriety for the best original essay on the pathological lesions of chronic alcoholism capable of microscopic demonstration, has been awarded to Dr. P. F. Spaink, Baarn, Holland.

THE Russian Government has made an appropriation of 1,500 roubles annually for the maintenance of a Pasteur Institute in Tiflis for the cure of hydrophobia.

At the Medical Congress of Cuba, Dr. Lyada read a paper on yellow fever, which disease he affirms not to have existed in Cuba before the African immigration.

THE AMERICAN DENTIST IN PARIS.—The following item in the *Illustrated London News* reflects the status of American dentistry at Paris: "Dr. T. W. Evans, the eminent dentist and proprietor of the *American Register*, has returned to Paris from a visit to Carlsbad. On Tuesday last, he invited a number of the dental and medical profession of the French capital to witness the operation, known as 'dental grafting,' which was performed by Dr. W. Younger, of San Francisco, who has a brilliant reputation in this department of conservative dentistry."

THE NATIONAL PENSION FUND FOR NURSES IN ENGLAND.—This is a kind of mutual benefit combination among nurses to provide at low cost against the accidents of disablement and declining years. The Princess of Wales is its presiding

officer. About \$290,000 is the fund acquired within the very short time that has elapsed since its founding. The motto of the association is, "Thrift and Benevolence offering rest to Age;" and the seal represents two strong young damsels helping an aged woman with a crutch to ascend some door-steps.

SPECIAL MEETING OF THE BOARD OF TRUSTEES OF THE AMERICAN MEDICAL ASSOCIATION.

Held at the Riggs House at Washington, D. C., November 13, 1890.

Present:—Drs. Hooper, Hollister, Love, Nelson, Shoemaker and Hamilton.

The meeting was held in pursuance of the following call of the President:

LITTLE ROCK, ARK., Oct. 31, 1890.

Dear Doctor:—A majority of the Board of Trustees of the American Medical Association deem it essential for the best interests of the JOURNAL, that a meeting of the Board should be called to convene in Washington, D. C., and have so signified the same in writing. Therefore, in compliance with said request, I hereby appoint Thursday, November 13, 1890, at 10 o'clock A.M., at the Riggs House, Washington, as the time and place of meeting.

It is important that each member shall endeavor to make it a point to be present. Very truly yours,

(Signed)

P. O. HOOPER, President.

The letter on which the foregoing call was made is as follows:

WASHINGTON, D. C., Oct. 14, 1890.

DR. HOOPER, President Board of Trustees, Little Rock, Ark.

Sir:—We, the undersigned, have the honor to request that a meeting of the Board of Trustees be called to meet in Washington, at your convenience, in November, to consider the report of the Committee on Permanent Place of Publication of THE JOURNAL; and also that of the Committee on Advertising.

(Signed) JOHN B. HAMILTON.

" JOHN V. SHOEMAKER.

" I. N. LOVE.

" W. W. DAWSON.

" D. E. NELSON.

The minutes of the previous meeting were read and as it nowhere appeared that the salary of Dr. Hollister, while acting as Supervising Editor, was fixed at \$250.00 a month, on motion, it was ordered to be incorporated in the minutes of this meeting to take effect from the last meeting. The Secretary stated that he had no record of the meeting of the Board at which the foregoing action was taken, and that it was done during his temporary absence.

The proxy of Dr. Dawson and Dr. Moore was

presented by Dr. Hooper, who was by them authorized to cast their votes.

The Chairman of the Committee on Management stated that no meeting of the Committee had been held. He presented summary statements of receipts and expenditures with a list of payments made by advertisers for the month of October. The circulation of *THE JOURNAL* since April 1, 1890, had increased about 200, notwithstanding that nearly 300 names had been dropped from the lists for non-payment of dues. The question of incorporation was discussed and on motion of Dr. Love it was ordered that application be made for a certificate of incorporation.

Referring to the book of records, the Secretary stated that his letter of resignation as editor was omitted from the book, and on motion of Dr. Hollister it was ordered to be inserted.

Then, on motion, the Board took a recess until 2:30 P.M.

AFTERNOON SESSION.

The Board met at 2:30, and the Committee on permanent place of meeting, Dr. Love, Chairman, made a report in favor of Washington, as a permanent place of publication. He spoke as an individual member of the Committee. He advocated the appointment of a business manager.

DR. NELSON thought the question should be postponed until the next meeting of the Board.

The report of the Committee was then taken up for discussion.

DR. SHOEMAKER spoke of the necessity of strengthening *THE JOURNAL*, and advocated Washington as a permanent place of publication. He felt bound to those who put him on the Board to vote for the National Capital as the permanent place of publication.

DR. HOLLISTER argued in favor of submitting the question to the Association in session.

DR. HOOPER spoke in favor of delay, as he wished the question to come before the members of the Association, but said he would vote for Washington as a permanent place of meeting if it could be shown as the best location. He wanted it inserted in *THE JOURNAL*. He wanted a committee appointed to give the arguments or the reasons why *THE JOURNAL* should go to Washington, and have it published in *THE JOURNAL*.

DR. SHOEMAKER moved that the report be received and a special committee be appointed at once to formulate a plan as soon as the com-

mittee can do so, and report on the removal at this meeting, of which committee Dr. Hooper shall be chairman.

DR. HAMILTON said that so far as expense was concerned, if it were removed to Washington there would be no additional expense over that now involved in the publication at Chicago.

The committee, Drs. Hooper, Love, Nelson and Shoemaker then retired and presented the following report, which was adopted. Dr. Hollister voted No.

Resolved: That the sense of the Committee be that the home of *THE JOURNAL*, of the Association should be permanently at Washington, D. C.

Resolved: That the Trustees incorporate the foregoing resolution in their report to be presented at the next meeting of the Association.

DR. SHOEMAKER, from the Committee on Advertising, reported that as the place of meeting was to be changed, he recommended that the committee be continued, with the addition of Dr. Nelson.

On motion it was ordered that the minutes be printed in *THE JOURNAL*.

DR. SHOEMAKER offered the following, which was adopted.

Resolved: That the Trustees recommend the members of the Association, or the various State and local medical societies in affiliation with the Association, to contribute or subscribe funds for the erection of a permanent building as a place of meeting as well as a library and office for the American Medical Association.

The Trustees desire a full discussion of the foregoing resolutions, and it was moved that in order to insure uniformity in the discussion it be requested that communications for *THE JOURNAL* on this subject be limited to fifteen lines.

On motion the Board adjourned until 10 A.M., Friday.

FRIDAY, 10 A.M.

The Board met pursuant to adjournment. Present: Drs. Love, Hooper, Hollister, Nelson and Hamilton.

On motion of DR. LOVE it was ordered that Dr. Hollister be instructed to make such contracts as may be necessary for the conduct of *THE JOURNAL*, until the next meeting of the Association.

At 11:45 A.M., the Board called at the Executive Mansion and paid their respects to the President of the United States.

On motion the Board adjourned subject to the call of the President.

JOHN B. HAMILTON, Sec.

TOPICS OF THE WEEK.

CEREBRO-SPINAL FEVER.

This disease causes annually between 400 and 500 deaths in the State of New York. In 1889 there were 400 cases distributed over less than 100 localities, and including 20 out of the 30 cities of the State. It is a remarkable fact that although New York reports deaths from cerebro-spinal fever every month in the year, not one is reported from Brooklyn. In fact, since 1884, there has been but a single death reported from this cause in Brooklyn. By statistics it is shown to be a disease occurring at all times of the year, its greatest prevalence being in the spring months, and the least prevalence during the summer. The uniformity of its existence is noteworthy. No other disease is so constantly present, as shown by its mortality. Another notable fact is the steadiness with which it clings to a locality in which it has become settled. In New York, Buffalo, and Troy it is epidemic, while in other towns it has occurred in an epidemic manner. As to the causation of the disease, nothing very definite is known. A morbid principle seems to inhere in the locality affected, but what the conditions are which favor this inherence is not known. It clings to large cities, and with equal persistence to rural villages. A high level of the groundwater has been observed to exist in districts chiefly affected, and therefore it is proposed, as a remedial measure, that such places ought to be drained. The co-existent prevalence of pneumonia with cerebro spinal fever, two diseases frequently associated, could not be recorded.—*Tenth Annual Report, New York State Board of Health.*

EARLY RISING AND LONGEVITY.

Professor Humphry's recent Collective Investigation Report on Aged Persons, contains some very positive evidence on a matter which has already engaged the attention of moralists as well as physicians. "The opportunity for nutrition to do its restorative work was in nearly all provided by the faculty of 'good sleeping,' to which was commonly added its appropriate attendant, the habit of early rising." Thus there is a relation between early rising and longevity. No doubt many people will hastily seize upon the sentence just quoted, and employ it in edifying lectures or essays for the perusal of youth, or embody it in popular medical works. Important qualifications follow in Dr. Humphry's report, but they are likely to be overlooked. Doubtless the habit of early rising is, in itself, healthy; most of all, it is a good sign of health, when it evidently signifies rapid recovery from fatigue. Again, it usually denotes a strong will, the gift, as a rule, of a good physical constitution, or at least the safeguard of average bodily strength. Late risers are generally either invalids or persons of bad habits, illers who are never free from other vices besides idleness. The nervous exhaustion which keeps a man wakeful throughout the small hours produces sleep late in the morning. This exhaustion is invariably due to one of several life-shortening influences, especially anx-

iety or indiscretion in diet or drink. Early rising is thus rather one effect of certain favorable influences, another result of which is longevity, than a cause of longevity. To turn a weakly man out of bed every morning at 7 o'clock will not prolong his life. It will be noted that by "good sleeping" Professor Humphry signifies quick sleeping, "that is, the reparative work which has to be done in sleep is done briskly and well." Here, again, we have an effect of a cause; but preventing a weakly subject from sleeping more than four or five hours nightly would not cause him to live long, but would rather tend to shorten his life. Equally important are Professor Humphry's observations which show that by "early" he does not entirely mean the time by the clock. The word "has a relative significance with reference to the time of going to bed. A person who retires to rest four hours after midnight and gets up at 10 A.M. may be strictly regarded as an 'early riser.'" Thus, early rising is synonymous in long life histories with short sleeping, which means rapid recovery from fatigue, a sign of bodily strength. These scientific facts in no wise contradict the alleged value of early rising as a practice to be cultivated by all persons in good health. It is excellent as moral discipline, and eminently healthy as a matter of fact. Most persons will eat three meals daily. When a man gets up late those meals will probably follow each other at too short intervals to be wholesome. When he is an early riser it will probably be otherwise. He can enjoy a good breakfast, and by the time for his lunch or mid-day dinner he will have an honest appetite again.—*Brit. Med. Journal.—Weekly Medical Review.*

CONCERNING POSSIBLE THERAPEUTIC USES OF HYPNOTISM.

I am not very sanguine as to the future of hypnotism as a curative agent in nervous or other diseases. According to my own researches—and those researches date back eight years or more—the method is vastly more limited than one would imagine from the exaggerated claims which have been of late advanced in its behalf by over-zealous medical men. Let me mention a few of those limitations. In the first place, only a certain (unknown) percentage of persons are amenable to the hypnotic influence; or, to express it more exactly, only a limited number of persons are hypnotizable with the present means at our command. Secondly, the effects obtainable are evanescent; for, unless we hypnotize the patient so often as to incur the risk of doing him an injury, we cannot hope to perpetuate the suggestions sufficiently to do any good.

From these considerations it follows that the permanent effects which one may hope to produce upon the material economy through this class of psychical forces must be insignificant. Functions may, it is true, be exalted or depressed for the time being, but qualitative changes in the structures themselves are impossible. The internal capsule, the thalamus, the motor convolutions, the sensory tracts in the cord once destroyed, are not to be restored by any form of interference. Moreover, a physiological substitution (in Bernheim's sense)

for these and analogous structures, seems well beyond the farthest bounds of physiological probability. Hence, as I have previously mentioned, all attempts to apply hypnotism to the treatment of organic diseases are opposed to sound thinking. Indeed, I regard such proposals as hurtful to science, and particularly medical science, inasmuch as the reputation of the profession for sound judgment is thereby greatly jeopardized. The facts which the advocates of such questionable methods have to present are still too few in number, and too meagrely substantiated, to form the basis of affirmative argument. What then is the position which hypnotism may be expected to assume in the neuro-therapy of the future? In my opinion, the rôle which it is destined to play is a subordinate one. In the light of its present and past history, I do not see how it can be otherwise. As an adjunct in the management of minor degrees of hypochondria, morbid apprehension, depression, and hysteria, it may sometimes be invoked, but then only as a collateral expedient, and largely with a view to rendering the patient more tractable and amenable to other elements in the plan of treatment. The aid afforded by an appeal to the expectancy of the sick is familiar to every physician; by invoking the aid of the hypnotic state such an appeal may be made with an energy which is not attainable while the patient remains in the ordinary mental condition. But, while the miracles recorded by enthusiastic writers make, like Munchausen's tales, entertaining reading, they are not likely to enter into the sober realities of the consulting-room.

In view of what we now know of it, hypnotism is to be dealt with by the physician; for it is evident that a competent medical man is alone in a position to judge of its real or imaginary advantages. Certainly, only such a man should be allowed by our statutes to invoke its assistance in the treatment of diseases, however insignificant.—J. Leonard Corning, *Med. Record*, November 8, 1890.

THE CLINICAL USE OF THE PHONOGRAPH

has been attempted in this country, but without very great results. Better success seems to have been obtained in London. The *British Medical Journal* says that Mr. Ernest Hart recently suggested to Colonel Gouraud that the phonograph might with great advantage be employed to record the characteristic changes in voice-sound which mark a variety of diseases, such as whooping-cough, laryngismus stridulus, and the characteristic forms of dysphonia indicative of some forms of hysteria, and partial paralysis of the vocal cords, dependent upon pressure upon the recurrent laryngeal nerve. This suggestion Colonel Gouraud readily acted upon, and Dr. Felix Semon kindly consented to select from his patients at St. Thomas's Hospital a few cases in which pathological varieties of phonation were present. This was carried out with great success, and on Tuesday night, at a social gathering at 38 Wimpole street, at which a considerable number of eminent medical men happened to be present, the phonograph reproduced the characteristic vocalization of some of these diseases with the most realistic effect. The whoop of whooping-cough,

with the intervening cries of the patient, were as vividly reproduced as if the child were in the room, and so also were the hoarse utterances of a case of stenosis of the larynx. The opinion was generally expressed that this new application of the phonograph to the purposes of diagnostic and clinical instruction constituted a solid gain for teaching, and probably for many other purposes.—*Medical Record*.

IMMIGRANT DERMATOSES.

Dr. James C. White calls attention to the fact (*Journal of the Cutaneous and Genito-Urinary Diseases*) that immigrants import skin diseases into this country. First there are those skin affections which are directly caused by life on shipboard; then there are those induced, after arrival, by influences not previously operative; and finally the direct importation of diseases more prevalent in other countries. In the last class may be included scabies, favus, lupus, leprosy, melanosis lenticularis progressiva, and prurigo. The author states that unless some more stringent laws are made to keep out of our country the pauper and dirty populations of Europe, the direct importation of the diseases we have been considering, and those which may arise as well from the filthy habits they bring with them and transmit to their children, must follow with increasing magnitude. To obviate such a condition the following measures are suggested: 1. To cleanse all immigrants of animal parasites on landing by treatment of person and clothing. 2. To retain in quarantine all immigrants with other contagious diseases, including venereal affections, a sufficient time for treatment. 3. To return to their homes all persons affected with such contagious diseases as it is impracticable to treat in such a way, as leprosy, tuberculosis, and advanced syphilis. 4. To provide for efficient medical inspection of foreign ports of emigration, with the power of arresting importation of dangerous diseases to this country.—*St. Louis Medical and Surgical Journal*.

PYOCTANINE.

The aniline colors have among them several members of the fraternity of antiseptic substances. Pyoctanine is the name of the violet and yellow members. Other aniline colors will probably assert their properties in that line within a short time. Heretofore we could often find out to what antiseptic substances a surgeon was partial by the various odors that permeated him as with a garment, but at present the hues that variegated his hands will give him away. Members of the profession that are endowed with an artistic eye will be able to dress wounds with picturesque effect. Too liberal an employment of primary colors will be described as rather harsh treatment. There will be simple, steady, reliable elderly gentlemen who will be content with a monochromatic dressing, while others, often of lesser years and more æsthetic tendencies, will stake their reputation and their patient's welfare upon an application of substances cunningly mingled, so as to resemble more in general effect the every day patchwork quilt of our aunts and the coat of Joseph.—*International Jour. of Surgery*.

PRACTICAL NOTES.

MR. HUTCHINSON'S TREATMENT OF RINGWORM.

Mr. Jonathan Hutchinson gives, in his *Archives of Surgery*, the prescription upon which he has "settled down in tolerable content" for the treatment of ringworm, after having tried a great variety of remedies without equal satisfaction. He relies chiefly on chrysophanic acid. He orders as a wash for the scalp one drachm of Wright's liquor carbonis detergens to the pint of hot water. Twice a week the scalp should be well washed with this, and all scales and crusts should be removed. The hair is cut close or shaved. The chrysophanic-acid ointment contains a drachm of chrysophanic acid, twenty grains of ammoniated mercury, a drachm of lanoline, six drachms of benzoated lard, and ten minims of liquor carbonis detergens. This ointment is to be rubbed in more or less freely, according to its effects, night and morning, or latterly every night only.—*N. Y. Med. Journal*.

PREVENTION OF THE TOXIC EFFECTS OF COCAINE.

Dr. Gluck (*Med. Rec.* June) writes on this subject. He uses a combination of cocaine and carbolic acid, dissolving two drops of the acid in one drachm of distilled water, and then adding ten grains of cocaine hydro-chlorate. Carbolic acid is itself an anæsthetic, and as it coagulates albumen and forms a superficial eschar, it prevents the rapid absorption of cocaine. He claims that the anæsthetic effects of cocaine are increased by this mixture, that its toxic effects are prevented, and that the solution is rendered aseptic.—*Review Ins. and Nerv. Disease*.

PHENACETINE.

Thompson says: In any given case of nerve pain where one might suspect a weak or fatty heart, phenacetine is to be preferred to antifebrine. It does not seem to act quite so surely as the latter, but after using three and a half ounces of it, I much prefer it to antipyrin. Such is my experience of phenacetine, after a fair trial. In seven or eight grain doses every four hours, it is a safe and effectual remedy in all neuralgias, be they in the head, back, or any other part of the body.

Rifit (*Bull. de Ther.*) reports very favorable results from large doses of phenacetine in acute articular rheumatism, particularly that of gonorrhœal origin. He gives the fifteen grains every three hours the first day, increasing the dose the following day, until the pain is relieved and the joints become movable. This occurs as a rule when six or eight doses per diem are given. These large doses are continued for three days longer, then gradually reduced to three times per day fifteen grains one week longer, and then

omitted. Treatment by this plan reduced the time to twenty-one days, while that by the salicylate is thirty-five, and by antipyrin twenty-five days. In twelve cases so treated no heart symptoms were noticed. Relapses are unusual if the above plan is followed.—*Times and Register*.

IMPURITIES UNDER THE FINGER NAILS.

We are all, doubtless, familiar with the common belief of people in the poisonous properties of the finger nail. We have, indeed, ourselves seen some severe inflammations caused by the scratch of a nail. So general a belief must, according to Herbert Spencer, have something of truth, and modern bacteriology has furnished the demonstration. It is not the nail *per se*, of course, that poisons, but something that is on or under the nail. Seventy-eight examinations were recently made in Vienna (says the *British American Journal*) of the subungual spaces, and there were found: of micrococci, 36 kinds; of bacilli, 18 kinds; of sarcinæ, 3 kinds, and common mould spores were very often present.

Personal cleanliness should be insisted on in everybody, but how necessary is it for the surgeon. Antiseptics can never and will never successfully *take the place* of soap and water and the scrubbing brush, but as additions to this process they must, in the light of the demonstrations before us, be henceforth forever included in the routine practice of the conscientious surgeon. The habitually clean will, of course, have less trouble in the preparation of the hands, but the necessity for attention to details in the cleaning of the hands and nails has now been made plain by the valuable experiments of Furbringer, confirmed by many others and the practice of surgeons like Billroth, who now adopts the suggestions of these investigations in his operative work.—*New Orleans Med. and Sur. Journal*.

CREASOTE IN DIABETES.

The *Lancet* says, two cases of diabetes have been treated with excellent results by Valentini, by means of creasote administered internally. In one case, four drops per diem were given at first, this quantity being afterwards increased to ten drops. Under this treatment the sugar disappeared, and did not return when the patient began to eat starchy food. The other patient was given six drops per diem, and did equally well.

ANÆSTHESIA IN SMALL OPERATIONS.

For this purpose Dr. A. Dobisch, of Zwickau, recommends spraying the parts for one minute with the following: Chloroform, 10.00, ether, 15.00, menthol, 1.00. This produces complete anæsthesia of the skin lasting from two to six minutes.

SOCIETY PROCEEDINGS.

The Gynecological Society of Boston.

*214th Regular Meeting.*THE PRESIDENT, W. SYMINGTON BROWN, M.D.,
IN THE CHAIR.DR. JESSE F. FRISBIE read the following paper,
entitled:

A PECULIAR CASE.

On the morning of March 31, 1888, I was hastily summoned to the bedside of Mrs. P., the beautiful and accomplished wife of one of the most enterprising young men of Newton. I was informed she had been suffering very severely all night with pains and cramps in the bowels. I was also informed that she was a little more than seven months pregnant. She had been married about two years and this was her first pregnancy. Her age was 23 years.

When I first saw her the pains were regular, and she appeared very weary and worn from sleeplessness and suffering. I at once diagnosed premature labor, and upon making a digital examination found the os dilated and the fœtus nearly half expelled—a footling presentation.

In the course of an hour I succeeded in removing a male fœtus and the placenta. There was hardly the slightest tinging, with blood, of the rather scanty secretions, and of “waters” there had been practically none, so slight had been the moisture at the time the membranes ruptured. The fœtus corresponded to the size of one five and a half or at most six months, shrivelled and shrunken, and in an advanced stage of disintegration, if that term can be used without indicating decided decomposition. There was but little odor of putrefaction, but I could, with my fingers, as easily pick the skin and tissues from the body as I could had it been thoroughly cooked. The placenta was rolled into a ball, hard and compressed, bloodless and friable. The appearance of fœtus and placenta presented unmistakably the condition of a fœtus that had been dead many weeks. The rolled up, compressed and bloodless placenta, and the absence of blood and amniotic waters, were caused by the gradual contraction of the uterine walls during the weeks following the death of the child. There being, during this period, no flow of blood to the placenta or child, absorption of blood and waters had gone on as uterine contractions took place.

Further investigation revealed the following history: The patient was a native of Nova Scotia. For several years before her marriage she had suffered from some uterine disease for which she had received little or no regular treatment. She had suffered at times from acute nephritis, and at this time there were ample evidences of a chronic nephritis, the effect of the acute attacks

referred to. In addition to these she had a weak, and at times a painful and irregular heart. These two last may have been inherited from her mother, as I found (upon her becoming a patient of mine), that she had suffered from the same diseases for many years. After her menses appeared, which was at the age of 13 years, she had been more or less hysterical. Notwithstanding all these complications my patient was a well developed and rather fleshy young woman.

She had suffered from the usual attendants of pregnancy, and also from a circumscribed, sensitive and sore spot to the right of the median line, below the umbilicus, apparently nearer the uterus than the right ovary. This she had been troubled with, at times, previous to conception. Some four or five weeks before I was called to attend her, she had met with an accident—a fall—striking upon the back near or below the kidneys. From the effects of this fall she had suffered, more or less, all the time till her confinement. No movement of the child had been felt after that fall, and she was not sure that motion had been felt for a little time previous. The os uteri, which was only partially dilated, presented to the finger the decided appearance of inflammation, or perhaps excoriation, and in my opinion the slight traces of blood, seen at time of confinement, were caused by the blood being forced out from the os or its neighborhood, as the parts dilated and the child was pressed down and expelled. The after-pains were quite strong, and the uterus readily contracted to the size of a small orange.

For weeks she had suffered from uterine pains almost daily, sometimes quite severe. She supposed these to be abdominal pains consequent upon her condition and to be naturally expected, and the entire night before her morning delivery she had suffered intensely with the same kind of pains, the only difference being in degree. She hardly more than had a suspicion that labor had begun. Even this suspicion was repugnant to her, as she was very anxious to bear a living child. In fact, during a thirty years' practice, I have never seen a woman who appeared to desire a child so much, and the loss of which occasioned so great disappointment and grief.

Taking into consideration the past history of this patient and the conditions existing at time of delivery, I naturally felt grave apprehensions as to the future outcome of the case. Accordingly, from the first the treatment was thoroughly antiseptic. Absolute cleanliness was insisted upon and as far as possible carried out. The vagina was douched twice a day with a solution of carbolic acid in water—1 to 40—as hot as could be borne, at the same time sponging the external parts with the same solution. The bowels were kept open with gentle aperients and enemata.

For several days everything seemed to progress satisfactorily. On the fifth day after delivery a

severe chill occurred which was immediately followed by high pulse, and temperature accompanied by a heavily furred tongue and rapid sinking of the heretofore good spirits and stamina. Apparently the cause of this sudden break down was the communication to her of the sad news that a near relative of hers, in her own home, had died after a few days' illness. Immediately thereafter the sensitive and tender spot in the right side, to which reference has been made, became exceedingly painful and continued to cause great suffering for many weeks. At the same time the right leg became tender and painful from the body to heel, and the suffering at times was almost greater than she could bear. Swelling supervened with the general appearance of phlegmasia dolens. Accompanying these, although at first with rather obscure symptoms, septicæmia developed and my poor patient seemed to have the whole decalogue of diseases. As the days passed on and she grew gradually weaker there was almost a constant pain at the heart which caused her great distress.

Fearing from the first that septicæmia might develop my whole treatment had been antiseptic and supporting. The bowels had been kept open by enemas and the little strychn. et belladonna pill. Quinine, brandy, wine, etc., were given for supporting tonics and morphine, by mouth; hypodermic and vaginal suppositories to relieve pain.

With the development of septicæmia the uterus became hot and very tender, while a profuse discharge kept the nurse busy. Every three or four hours the vagina was thoroughly douched with a hot solution of carbolic acid. But for these precautions the odor would have been unbearable, and even with them, at times the smell did not remind one of a peach orchard or breezes from Araby the Blest. Tincture of iodine and hot fomentations to which tincture of opium was added were freely applied to the abdomen. Liniments of soap, laudanum and arnica were applied to the leg. About the third week from the confinement I called Dr. H. O. Marcy in consultation. He coincided with the treatment, suggesting in addition the use of iodoform suppositories. These were freely used to decided advantage.

At the expiration of two more weeks the patient was able to sit up. A little over-exertion, with perhaps a slight cold, and a relapse followed. The pain in right side and leg returned and became very severe. The pain at the heart also gave her intense suffering. But there was no return of the uterine discharge as it had been three weeks previously. After the most careful examination, I could not discover any lesion of the heart except weakness, and sometimes a little irregularity in beat—functional rather than organic.

About this time meddlesome and over officious

friends insisted upon another consultation. The husband yielded and Dr. J. H. Chadwick was called in.

After making a careful examination and finding the uterus easily movable, at about normal temperature, and the general condition of the patient satisfactorily improving, he informed the husband and friends that they were unnecessarily scared about nothing, and recommended a practical continuance of the treatment then in force.

She continued to improve, and with the occasional use of tr. of digitalis and acetate of potash, combined with triticum repens, made a good recovery, with the exception that the circumscribed spot on the right side still remained sensitive and at times painful. Several months after, she had leucorrhœa for which was ordered a douche of hot water to which was added zinci sulph. or cupri sulph. in small quantities, once or twice daily with excellent results. Other local treatment was advised but not carried out.

A year and a half after her confinement she conceived again, and on the 29th of last November I delivered her of another 7 months' child—alive—which weighed $2\frac{3}{4}$ pounds and lived four weeks. A few hours after her pains began she had a convulsion which was followed by five others during the succeeding ten hours, and convulsive twitchings about face and neck for four or five weeks. The first two days she was unconscious and that time has ever been a blank to her. The first of these convulsions occurred on Tuesday morning and the child was born on Thursday morning.

Chloroform was at once administered and Dr. H. M. Field called in consultation. Afterwards hypodermic injections of morphia were given frequently till the convulsions ceased. For reasons which have now escaped me, we did not deem it judicious to dilate the os and deliver. If my memory serves me the os was then not dilated to the size of a ten cent piece. The bowels had been thoroughly evacuated by enemas long before the convulsions occurred. After the convulsions ceased she was fairly comfortable till her delivery. The pain in side and leg reappeared in a few days, but not to so severe an extent as at the previous confinement.

About three weeks after her confinement the tumor (?) fibroid or fibrine, which I now exhibit to you, was expelled, without any pain and without her knowledge, from the uterus. From that time she made a good recovery. To her and my gratification the circumscribed tender, and at times painful spot in the side has ceased to trouble her, from the time this tumor was thrown off. She is now in comparative health.

DR. GERRY said that he had been much interested in the paper. He thought that the patient had suffered from septicæmia and from the treatment he had noted the absence of curetting. He

believes that it has been stated that septicæmia comes on if at all about the third day and so he suspects if there is a rise of temperature then and intra-uterine treatment should be substituted.

DR. CONWAY stated that he seldom uses anti-septic treatment in midwifery; in fact he has only used it twice in treating 1500 cases and neither time was he satisfied with the results. Cleanliness, however, is all important and it is on this that he relies.

DR. ELLIOTT mentioned the case of a lady whom he had delivered the day before. She had a history of having been delivered two years previously and having a temperature at that time of 103° and 104° F. and later she had typhoid treatment in the City Hospital. For four days before this last delivery her temperature was 104° F. and her pulse was 120, but as soon as she was delivered the temperature came down to normal.

DR. STEVENS remarked that his experience had been a little different from Dr. Gerry's in that he has found that a rise of temperature on the third generally means that the flow of milk is being established, and further that when septicæmia is present it frequently comes on not till the fifth to sixth day and it may be delayed until the seventh day.

DR. KELLER asked if a microscopic examination of the specimen had been made? [answer by Dr. Gerry—No]. The Doctor then remarked that septicæmia comes on later than the third day, but yet if a chill comes with a rise of temperature on the the third day, then look out.

DR. BROWN, the President, said that he had enjoyed the valuable paper very much. The question arises, was the death of the first child probably due to this tumor. This he thinks is not the case. The woman was delicate and this tumor is probably a submucous fibroid. Septicæmia generally comes from the fourth to the seventh day but there is no regularity about it. The idea now prevails that there is no such thing as milk fever as such and that the rise on the third day is due to a commencing septicæmia.

DR. FRISBIE in conclusion said that the womb contracted to about the size of a small orange within a few hours after delivery. As all of the membranes came away he had no suspicion of anything wrong and so there was no indication for the curetting, etc., that had been mentioned.

THE INTELLIGENT FOREIGNER ON BRITISH PIETY.—According to the *Zeitschrift des Oesterr. Apoth. Vereins*, a special prayer-book for medical men has just been published in England. It contains a selection of suitable prayers for delivery on the occasion of surgical and other operations. There should be a companion prayer-book for the patient.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

The Chirurgical Treatment of Tuberculous Peritonitis.

At a meeting of the Chirurgical Clinic at the Hôpital de la Salpêtrière, M. le docteur Terrillon took for his lecture the following interesting study, viz.: "The Chirurgical Treatment of Tuberculous Peritonitis." A report of this lecture is just published of which I here give the contents.

We are about to study to-day an affection which has for a long time almost exclusively belonged to medicine, but which falls more and more under the dominion of surgery. I wish to speak of tuberculous peritonitis, of which we have, at this moment, an interesting example in our hospital.

You have been able to see, just now, in my ward, a young girl of sixteen years, pale, meagre, who presents a particular deformation of the abdominal region. The stomach is globulous, pointing forwards, as that of a woman affected with a cyst of the ovary. To profile, especially, this analogy is striking.

When one feels the abdomen, one becomes easily enough sensible of a rounded mass, as globulous, which fills it entirely. The surface of this mass is not smooth as that of a cyst of the ovary, but granulous and irregular.

If one control by percussion these data furnished by the palpation, one is astonished to find everywhere a quantity of sounding bodies. There is only then in some sort an appearance of tumor.

If we touch afresh the abdomen, in order to examine it more carefully we shall then be able to perceive two new signs which will aid us in forming the diagnostic: There is, firstly, a sensation of snowy friction that one perceives in depressing lightly the lateral parts of the stomach; in the second place, some little grumblings of the bowels provoked by the profound pressure, one describes them under the name of "intestinal cries."

In presence of these phenomena, in order to assure to the diagnostic a greater precision, we have submitted the patient to the chloroformic anesthesia. Once the muscular resolution obtained, we have proved that the abdominal wall relaxed itself a little. The appearance of abdominal tumor becomes less clear to the palpation, but one feels the small hard granulations, disseminated on the surface of the intestines. In the left flank, and more particularly in the right flank, one finds two or three masses of about the size of a mandarin. The peritoneal friction is found again upon nearly all the points of the stomach. We have equally practiced the rectal touch, which has not given us any important token.

Thus, in this case, we are in presence of an affection of peritoneum having provoked a secondary contracture of the muscles of the anterior abdominal wall, contracture which gives place to an appearance of tumor. This is, besides, a fact well known and that one observes in many circumstances, and I have been able to show you, some time since, several hysterical women who have been sent to me with the diagnostic of cyst of the ovary, and who had in reality, only contracture of the abdomen with tympany.

Nevertheless, between these abdominal symptoms of simulating hysteria, a tumor and the actual case, there exists a capital difference. With the nervous the appearance of tumor disappears completely under the influence of anæsthetic sleep. Here, on the contrary, the stomach, in becoming altogether more supple, presents, under the wall, some hard, resisting parts, superficial with respect to the intestine; that which indicates a lesion of the peritoneum.

Our patient is then affected with a tuberculous peritonitis. Her clinical history comes besides to the support of the physical exploration in order to confirm the diagnostic.

She has always been unhealthy and pitiful. Three years ago, she had already suffered during several months, of the stomach, at the same time she complained of vomitings and of diarrhœa. Her affection probably dates from this epoch. Afterwards, all had resumed its original order, when in the month of January last, the same troubles have reappeared, with more violence, at the moment of the appearance of the menstrual discharge. The patient has, since this period, suffered from sharp abdominal pains; some frequent and returning vomitings during several days, afterwards discontinuing, have much fatigued her. Finally, she has presented some alternatives of constipation and of diarrhœa. Since about a month, she has been ordered to keep her bed.

In presence of these functional troubles, the doubt is no more possible: we have to do with an unlooked for tuberculous peritonitis, without appreciable cause, in a young girl, and this is a fact frequent enough.

It rests with us to discuss the treatment that we ought to institute for this patient. But before doing so, I wish to describe to you, in some words, the lesions of the tuberculous peritonitis, its march and its complications.

I will not insist on the pathological anatomy of this affection, and I will only recall to you the particularities thereof which are essential to know in a surgical point of view.

You know that, when one examines at the autopsy, or at the course of a laparotomy, a tuberculous peritoneum, the lesions show themselves under two aspects very different.

In the first case, the parietal serous, as the vis-

ceral serous, is recovered with tuberculous granulations. These granulations remain often isolated as a seed bed to the surface of the peritoneum, and provoke an ascitic effusion more or less abundant. This form of tuberculosis has received the name of "ascitic form." Sometimes this ascitic tuberculous peritonitis presents some characters enough specious. At the same time as the ascites, are produced some false membranes which partition the effusion in several isolated bags. It is then than one often confounds peritoneal tuberculosis with an abdominal tumor, above all with a cyst of the ovary.

The second form is more rare; it is characterized by the absence of liquid, thus it has received the name of "membranous form." In this case, the tuberculous granulations, in irritating the peritoneum, have provoked the production of false membranes which retie the intestinal ansæ and the large epiploon in an irregular mass adherent to the abdominal wall. In these plastic, membranous forms, are often formed some centres of encysted suppuration, of which the volume is sometimes considerable.

The march of the malady is no more susceptible of a uniform description. In the great majority of cases, tuberculous peritonitis is a chronic affection; but it is not rare to see it commence by an acute state, as with our patient, and present successively some remissions and some outbursts. Nevertheless the ascendant chronic march accompanied with accidents of the side of the intestine, is the most common.

An important fact, upon which I desire to insist, is that habitually tuberculosis rests limited to the peritoneum, and does not invade the other organs, at least during several years.

You comprehend the great importance of this fact in a surgical point of view, for if the lungs, for example, are affected, there is then a contra-indication to all operation.

I tell you, that these unfavorable circumstances are relatively rare. Notwithstanding they are able to present themselves, and I will on this account cite to you an example which will show you the embarrassment in which the surgeon can then find himself: Three months ago, I was called in consultation concerning a young officer who presented sometime since abdominal phenomena quickly developed: ballooning of the stomach, vomitings, diarrhœa. One found by this patient the sensation of peritoneal friction of which I have spoken to you. I diagnosed a tuberculous peritonitis, but, in spite of the persistence of the patient and his surroundings, I refused all intervention, for there existed at the two summits of the lungs hollow sounds, and some humid cracking noises and, more, some profuse perspirations. My intervention would have been useless, for it concerned a tuberculosis of rapid march. The patient died, a few days after, from the progress of the

affection which was accentuated as much on the side of the lung as on the side of the abdomen.

I desire also to call to your observation that tuberculous peritonitis develops itself nearly always in young persons and even in children, principally between the age of 12 and 20 years. The patients that I have latterly attended for this disease, were 12, 17 and 18 years of age. It is well to remember, however, that, in spite of its frequency at this age, it is able to reappear later, towards 30 or 40 years. You will find, in a thesis, very well made, of Dr. Hemey (1866), some examples of tuberculous peritonitis in the adult, independent of other lesions.

Finally, what is the termination of the malady? I have not considered it necessary to tell you that its prognostic is unfortunate and that, if one does not intervene, the patients finish always by succumbing to the progress of the affection. The fatal termination can be hastened by some complication. There is thereof one which, although rare, ought to interest us particularly. These are those facts of pseudo-contraction, that one finds sometimes in the course of the peritoneal tuberculosis. I have lately observed thereof a case, which I will relate to you:

In 1887, a young girl entered into my ward at the Salpêtrière, with some phenomena of intestinal occlusion enough marked: ballooning of the stomach, fecaloid vomitings, contracted features. According to the antecedents of the patient and the abdominal palpation, I thought it to be a tuberculous peritonitis, and as the phenomena of contraction ruled the scene, I practiced laparotomy. I found some tuberculous lesions of the peritoneum very extended, but especially important to the level of the S iliac. There were there some granulations so abundant that the visceral peritoneum had the thickness of the little finger, and flattened the intestine against the wall of the basin. I tore this neo-membranous production upon several points, not being able to displace it entirely. Besides, I practiced some punctures of the intestine, with the apparatus of Potain, in order to clear it of the gases that it contained. This intervention brought a notable relief to the patient, but she died, three months after, of generalized tuberculosis.

It only remains to us, now, to study the treatment of tuberculous peritonitis.

Formerly, one only opposed to this affection a medical treatment: vesicatories, unguent Neapolitan, revulsion. One succeeded thus in easing the patients, under all its forms, but not in curing them. Fifteen years ago, Kœnig, making an error of diagnosis, practiced a laparotomy, believing to be in presence of a cyst of the ovary, and fell upon a purulent bag of tuberculous peritonitis. He cleansed it with care, closed the abdomen, and was quite astonished to see the healing persist after this operation.

Examples of this species multiplied themselves very soon, and the interventions in some cases of unsuspected tuberculous peritonitis did not fail to be numerous. Finally, surely, it is no more hazard, but by fixed resolution that one opens the abdomen in cases where this affection has been acknowledged. There exist actually many observations of this kind. We find, in a communication made before the Italian Society of Surgery in 1889, by Cecherelli, of Parma, the summary of eighty-five published observations, which have given the following results, after surgical intervention for patients affected with tuberculous peritonitis: healings, 52; deaths, 25; ameliorations, 6.

This intervention can take place under two circumstances very different. When there is ascites or when there are some purulent encysted bags, the intervention is quite natural. Truly, it is most frequently in this case that one has practiced it, and nearly always with success.

The operation consists in opening largely the abdomen. When one has proved the presence of tuberculous lesions, the purulent or ascitic bags are emptied. It is afterwards necessary to practice a minute cleansing of the abdominal cavity with sponges soaked in an antiseptic solution, such as those of thymol and of phenic acid. I generally use a solution of phenic acid.

It was in these conditions that I have operated upon a young girl, last year, who was affected with tuberculous peritonitis of ascitic form. After having incised the abdominal wall on a length of 12 centimetres, I fell upon an ascitic effusion of 7½ litres. I raised with care the totality of this liquid, and touched all the points of the peritoneal surface with sponges imbibed with a phenic solution at 200. The abdominal wound was sutured and a large drain put in its inferior angle. I left this drain in place thirty-six hours, and during this time there flowed out at least 1½ litre of liquid. The abdominal reuniting was perfect, and the reestablishment of the patient complete. Since, I have been informed that the healing is well maintained.

I have also had occasion to intervene, at the same epoch, for a purulent encysted tuberculous peritonitis. It concerned a young girl of 11 years, in whom one had diagnosed a pericæcal abscess. The bag, that I incised, was filled with tuberculous granulations and with yellow and thick false membranes. She was cleansed with a phenic solution at 1-20. Afterwards I made the suture and instituted the drainage. For a year the healing has been maintained.

In sum, with tuberculous ascites, be it generalized, be it encysted, surgical intervention gives place to perfect results.

Even as we have already indicated it, this form of tuberculous peritonitis is the most frequent; so it is our duty to examine if one ought to intervene in the other cases; that is to say, in those where

the peritonitis has a dry or membranous form, as that which exists in our patient. The greater part of the surgeons think that it is preferable to abstain in this case, on account of the extended adhesions uniting the intestine and the epiploon, and hindering to penetrate largely into the abdominal cavity. M. Truc, in his thesis of aggregation (1886), advances this same opinion. It is, really, difficult to understand if in simply tearing some false membranes, one is able to make an intervention useful to the patient.

I have been able, besides, to find in medical literature some observations of this kind; but I have personally observed a fact which permits me to conclude in favor of the utility of laparotomy, even in these unfavorable circumstances. This history is most interesting; so permit me to describe it with some details: It concerned a young girl of 18 years, who was sent to me, in 1886, by M. le Docteur Duffau, of Laon (Eure-et-Loire) and by M. le Professeur Lannelongue. She had a projecting stomach, voluminous, and to the palpation as well as to the percussion, one had the sensation of a solid tumor adherent to the abdominal wall. I thought it to be a sarcoma developed in this wall, and I decided to practice laparotomy. This operation was made in March, 1886, in presence of M. Lannelongue. The abdominal wall was abnormally vascularized, very bleeding. I arrived upon the peritoneum, thickened and adherent. It formed a sort of breastplate of the thickness of the hand, composed of a tissue of false membranes infiltrated with tuberculous granulations. I incised it largely. I sought afterwards to separate the false membranes which agglutinated the intestinal ansæ among them, but I was not able to arrive there. I was obliged to close the stomach, little satisfied, I confess, with my intervention.

The operative results were benign: the fifteenth day, the patient rose. At the end of twenty-two days, she departed for the country.

I thought that she had certainly soon succumbed to the progress of this affection, when I learned, a year after, from her physician, that the patient was much better. At the end of eighteen months, the patient came to see me at the Salpêtrière, and I proved, to my great surprise, that she was completely healed. The stomach was supple and appeared absolutely normal.

This fact is so surprising that one has the right to ask oneself if it be really the surgical intervention which has healed the patient, or if the affection has not made this retrocession of itself. I believe, for my part, that there is in laparotomy an empirical side that we shall ourselves explain perhaps still later, but which we are only able in effect to prove. I am, however, persuaded that the operation has had, in this case, a favorable influence.

I will cite to you, besides, some examples of

healing for analogous peritoneal productions, which I have observed several times. It is even so, in numerous cases of ancient salpingitis, having provoked some years since some outbursts of pelvipéritonitis, laparotomy demonstrates that the basin is filled with false membranes uniting the intestinal ansæ among them, and that the tumor is so adherent that one is not able to displace it. The surgeon contents himself then with making movable as much as possible the intestine and the epiploon, he cleanses with care the surfaces thus torn and closes the abdomen. In these examples, I possess thereof four, well defined and quite authentic. Not only the chirurgical intervention relieves the patient, but one sees shortly after, the impotence produced by these membranous formations disappear and the intestine retake its normal functional state.

Lastly, I have made before you an operation of this kind upon an overseer of the Salpêtrière. The relief has been so considerable that the patient has been able to resume her occupation, though laborious. Nevertheless, I had not removed any of the affected organs; I had only destroyed some adhesences.

Thus, in the presence of these facts, I shall not hesitate to practice a laparotomy on our little patient. We have placed to her the diagnosis of tuberculous peritonitis; we know within a little what are the lesions that we shall find at the opening of the peritoneum, and I believe that she will benefit much by an operation. It is the right and the duty of the surgeon to practice this intervention, which is besides, for the patient, the only chance of salvation.¹

A. M. G.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Prof. Koch and his reported cure for Consumption—The Tortoise Field Hospital Equipment—Medicinal Rings—Hydro-chlorate of Glutin-Peptone—Miscellaneous Gleanings.

Professor Koch's reported cure for consumption arouses intense interest and expectation in the Teutonic medical world. After long experiments Dr. Koch has so far perfected the discovery that he will give a full account of his method in a public lecture at the December meeting of the Berlin Medical Association. He does not expect to cure patients in an advanced state of the disease, because other parasites have then attacked the lungs while his remedy only kills the tuberculosis bacillus. But he is certain of success in the early stages, his process being curative, not

¹ The patient was operated on May 5, 1890, and presented to the Society of Surgery June 18 last. A large incision upon the median line gave access into the peritoneal cavity, filled with false membranes and granulations. Several intestinal ansæ were liberated. The wound was closed without drainage. The patient has given news of herself by letter October 1, 1890, and declares herself to be absolutely healed.

preventive, like vaccination, although it resembles the latter process by lymph being injected under the skin. Eight persons are now undergoing the cure at a Berlin hospital. The Government will establish a Bacteriological Institute to enable Dr. Koch to carry on researches. At present the remedy is only produced at great expense, so a private society is being formed to monopolize the manufacture under Dr. Koch's management and to furnish funds for supplying the lymph to the poor.

The arena of the Chelsea Hospital Grounds, has just been occupied by the Military Equipment, Stores and Tortoise Tent Company, the directors of which had invited a company of experts to inspect a number of ingenious appliances necessary to the active operations of an army in the field. The company is principally interested in the Tortoise Field Hospital Equipment, the invention of Captain Tomkins, which has already gained the Empress Augusta's gold medal, and first prize at Berlin in 1889, a gold medal of the Liverpool Military Exhibition and many others. The principal aim of the inventor is to produce a ready means for the shelter and treatment of the sick and wounded as near to the field of battle as possible, which while containing nearly all that may be required for a field hospital will at the same time have the greatest mobility as a field flying hospital. The Tortoise hospital is contained in four wagons, and is capable of being removed from the wagons and carried on pack animals. In a mountainous country it may be carried by the Bearer Company or fatigue men on the stretchers, which form bedsteads in hospital. The whole hospital consists of 54 or if necessary, 60 beds carried in three wagons, each wagon being in itself complete with 18 or if necessary 20 beds, as a third of the hospital. For the medical staff and attendants a smaller four-wheeled wagon contains tent accommodation with beds for two surgeons, two superintendents, six nurses and one cook, together with all the requisite appliances. The weight of the three wagons when packed is 4,800 pounds including packs and panniers, requiring on military roads four horses at the rate of 11 cwt. per horse. The apparatus has already been used with considerable success in British Volunteer Camps, and a committee of the French war department is considering the question of adopting it throughout the army of the Republic.

There has recently been published for private circulation, a little work descriptive of medicinal rings which were at one time very seriously believed in. Physicians were wont to wear rings in which stones were set, and these stones were credited with the possession of many virtues. Sometimes it appears the patient was simply touched with the ring; sometimes he put his finger in it for awhile. Many a patient has worn

such a ring to stop hæmorrhage. If the result followed, the ring was unreservedly regarded as the healing agent; if the cure did not follow, nothing is told about it. Also in the middle ages magic rings were worn bearing the names of three wise men who presented gifts at the birth of Christ. They were Melchior, King of Nubia, who gave gold, Balthazar, King of Chaldea, who offered incense, and Jasper, King of Tarshish, who brought myrrh. These rings were considered specially efficacious in warding off various forms of disease, more particularly cramps. A remnant of this superstition still remains in some country places where certain affections of the eyes are treated by rubbing the part seven times with a wedding ring.

Of recent years many preparations of mercury have been devised, intended for hypodermic injection, but so far all have exhibited undesirable features. It is now believed that a substance has been discovered which is, in the first place, effective while having as slight toxic properties as possible; and, in the second place, it is unirritating and causes very little pain when injected. The new salt is described as a hydrochlorate of glutin-peptone in combination with corrosive sublimate. By treatment of gelatine with dilute hydrochloric acid, a hydrochlorate of gluten-peptone is obtained, containing 12 per cent. of hydrochloric acid. This is entirely soluble in any proportion in both water and alcohol, and to it is added mercuric chloride. When trying the medicinal effect, a salt containing 25 per cent. mercuric chloride was used. Physically this occurs in white, glassy lamellæ, forming a hygroscopic powder. The aqueous solution is stated not to be precipitated by caustic alkalis, by the alkaline carbonates, by the blood nor by albumen. Both the solid substance and the solution may be kept in well stoppered bottles without decomposition for twelve months if the light be not excluded. Owing to its combination with peptone, the corrosive properties of the chloride are obviated to some extent, and the entire absence of sodium chloride is thought to be an advantage. The employment of the drug has now extended over a period of nine months, during which time sixty patients have been treated, 1,300 injections being given altogether. The dose is $\frac{2}{3}$ of a gr., equivalent to $\frac{1}{6}$ of a gr. of mercuric chloride. The investigations have shown the new remedy to have numerous advantages, which may be briefly stated: 1. It is certain and quick in action. 2. The injection is accompanied by very little pain. 3. As there is little irritation of the skin, a rash is not produced when the salt is used.

The National Health Society has organized a course of six lectures on home nursing. The lectures will be accompanied by demonstrations, and will be given at the new offices of the Society. The Society will also give a course of lectures on

cooking, especially making a feature of invalids' dishes.

The St. John Ambulance Association has recently been doing good work among the employes of the Great Eastern Railway Company. At a recent distribution of certificates, a demonstration was given by the members of the Railway Ambulance Corps, wounded men being taken from the compartments and from beneath a railway carriage and conveyed away on a stretcher. The work was most effectually done, and was highly commended by the officials of the St. John Ambulance Association who were present.

At the present time many medical students in London find considerable difficulty in obtaining the necessary facilities at their own schools for going through a course of operative surgery on the dead body. In view of this, the Royal College of Physicians and Surgeons and the Apothecaries' Society have decided to accept the certificates of operative surgery of the private School of Anatomy and Physiology, directed by Mr. T. Cook. The school has already been recognized for this purpose by the University of London and by the War Office for several years.

A new monthly journal devoted to hypnotism and kindred subjects has recently begun to appear in Italy.

The powerful representations made with regard to the rank and status of medical officers in the British Army have been considered at a conference held at the War Office, and the question of rank and title for medical officers is now receiving the personal attention of Mr. Stanhope. It is thought that the Medical Staff Corps will be created a Royal Corps, and that in official lists the names of medical officers will appear according to seniority, and not at the bottom as at present.

G. O. M.

DOMESTIC CORRESPONDENCE.

A Correction.

To the Editor:—Mr. J. Greig Smith has called my attention to my unintentional misstatement of his views on page 643 of *THE JOURNAL*, for November 1, 1890. I hasten to say, therefore, that a reference to his "Abdominal Surgery" shows that he has clearly stated that floating kidney is always congenital, but movable kidney as a rule is acquired. Very truly yours,

W. W. KEEN.

1729 Chestnut St., Philadelphia, Dec. 1, 1890.

NECROLOGY.

SURGEON-GENERAL JEDEDIAH HYDE BAXTER, of English descent, was born in Stafford, Orange Co., Vt., May 11, 1837. He was educated in his

native State, receiving his medical degree in 1860. He then went to Washington, but in 1861 relinquished private practice and entered the United States service as Surgeon to the Twelfth Massachusetts Regiment, Col. Fletcher Webster. He was promoted to be Surgeon of the United States Volunteers in 1862, and was brevetted Colonel in 1865. In 1867, July 20, he was appointed assistant medical purveyor, and in 1874 was made chief medical purveyor, which office was created expressly for him.

He was a member of the Public Health Association, and American Medical Association, a corresponding member of the Boston Gynaecological Society and of the Philadelphia Academy of Natural Sciences. He was a contributor to scientific periodicals and the author of "Medical Statistics of the Provost Marshal General's Bureau." In 1876 he married Florence Tryon, daughter of the late William Tryon, of Washington.

On August 16, last, he was appointed Surgeon-General in the place of Surgeon-General Moore, retired. His friends had frequently urged his appointment to the office whenever a vacancy occurred, and when Surgeon-General Barnes died in 1881 he was promised the post, but lost it through the assassination of President Garfield.

His death occurred from paralysis with which he was stricken on December 1, on the third day, at two o'clock in the morning. He was buried in Arlington Cemetery, five foot battalions, a platoon of light artillery and two troops of cavalry acting as escort. The War Department closed its doors on the day of the funeral.

DR. PROCTOR THAYER, formerly professor of surgery at the Cleveland Medical College, died October 1, in the sixty-seventh year of his age. He was a native of Williamstown, Mass. For about 50 years, with exception of a part of two years during the late war, he was connected with the Western Reserve College, or one of its departments, as student or as teacher. About a year ago ill health impelled him to withdraw from his duties in the surgical professorship.

DR. ALBERT VOGEL, the eminent specialist in diseases of children, died at Munich, on the 9th inst. His well known text-book in pædiatrics was passing into its eleventh German edition at the time of final sickness, and had been honored with repeated translations in foreign lands. His professional reputation had been made at the University of Dorpat, whence he was retired with many distinctions, by the Emperor of Russia, at the end of his twenty years' professorate. This occurred in 1886, when Vogel made haste to return to his native city, Munich, where the welcome given him by the authorities and the medical profession was as warm as his de-

parture from the home of his life-work had been honorable and full of appreciation on the part of his former associates. He was at Munich the centre of many circles of influence, hospitable and social as well as professional, and was much sought after by medical visitors at that University town, and most cordial and generous were the attentions that he was pleased to dispense. He had only a little passed beyond his three-score waymark, when his final sickness occurred.

DR. CHARLES T. BEAN, died at his home, Chelsea, Mass., November 24, æt. 67 years. He was a native of Maine, a graduate of the Medical School, Bowdoin College in 1860, and was the original Lieut.-Colonel of the 24th Maine, a nine months' militia regiment in the early part of the late war. An exchange quotes his weight as being 460 pounds at his death.

DR. RICHARD J. LEVIS, who retired from practice in 1887, died at Kennett, Pa., November 12, of pneumonia, at his home, "Cedarcroft," for years the home of Bayard Taylor. He was born in Philadelphia in 1827, and was the son of Dr. M. M. Levis. He studied medicine at Jefferson College, Philadelphia, and was graduated in 1848. At various periods during his active professional life Dr. Levis was surgeon to the Wills Eye Hospital, the Philadelphia Hospital, the Pennsylvania Hospital, the Jefferson Hospital, and the Philadelphia Polyclinic and College for Graduates. From 1877 to 1887, he occupied the place of president of the board of trustees of Jefferson College. He also served as president of the Medical Society of the State of Pennsylvania in 1885, and as president of the Philadelphia County Medical Society during 1885-1886.

MISCELLANY.

HEALTH IN MICHIGAN.—For the month of November, 1890, compared with the preceding month, the reports indicate that cerebro-spinal meningitis, puerperal fever and inflammation of kidney increased, and that cholera infantum, dysentery, inflammation of brain, diarrhoea, cholera morbus, typhoid fever, pleuritis, measles and whooping-cough decreased in prevalence.

Compared with the preceding month the temperature was much lower, the absolute humidity and the relative humidity were less, the day ozone and the night ozone were considerably less.

Compared with the average for the month of November in the four years 1886-1889, cholera morbus, influenza, inflammation of kidney and scarlet fever were more prevalent, and typho-malarial fever, whooping-cough, dysentery, measles, inflammation of brain, inflammation of bowels, cholera infantum and puerperal fever were less prevalent in November, 1890.

For the month of November, 1890, compared with the average of corresponding months in the four years 1886-1889, the temperature was higher, the absolute humidity and the relative humidity were about the same, the day ozone and the night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of November, 1890, at 65 places, scarlet fever at 68 places, typhoid fever at 50 places, and measles at 23 places.

Reports from all sources show diphtheria reported at 10 places more, scarlet fever at 11 places less, typhoid fever at 46 places less, and measles at 5 places more in the month of November, 1890, than in the preceding month.

LETTERS RECEIVED.

New Orleans Publishing Co., New Orleans, La.; Dr. P. C. Remondino, San Diego, Cal.; Anne Marie Gillett, Paris, France; University of Minnesota, Minneapolis, Minn.; E. A. Birge, Madison, Wis.; Eli Lilly & Co., Dr. C. R. Schaefer, Indianapolis, Ind.; Dr. J. S. Rardin, Portsmouth, O.; Dr. N. S. Craig, Manchester, Iowa; Dr. G. F. Cook, Oxford, O.; Battle & Co., Peacock Chemical Co., Dios Chemical Co., Dr. W. A. Kendall, St. Louis, Mo.; Adolph Chaim, Dr. E. Pynchon, Subscription News Co., Armour & Co., Chicago; Dr. D. S. Lamb, Dr. W. C. Briscoe, Washington, D. C.; Dr. W. D. Hamilton, Columbus, O.; Dr. Wm. W. Keen, Wm. R. Warner & Co., Dr. Frank Woodbury, Dr. B. A. Randall, Dr. A. H. Fracker, Dr. W. B. Atkinson, W. J. Dornam, Philadelphia; Dr. A. Ravogli, Cincinnati, O.; Vogeler, Son & Co., Baltimore, Md.; Beman's General Newspaper Agency, Ann Arbor, Mich.; Dr. Robert Battey, Rome, Ga.; Dr. Paul Paquin, Columbia, Mo.; Dr. E. N. Johnson, Norristown, Pa.; Dr. G. W. Hudson, Camden, Ark.; Dr. A. M. Vail, Rock Rapids, Ia.; Wm. Davis, Omaha, Neb.; Dr. F. E. Schenck, Harveyville, Kans.; Dr. O. E. Werner, Milwaukee, Wis.; Dr. W. H. Geddings, Aiken, S. C.; C. Remscheid, E. Fougere & Co., Lehn & Fink, A. A. Marks, I. Haldenstein, New York City; Dr. F. W. Samuel, Louisville, Ky.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 29, 1890, to December 5, 1890.

Capt. William E. Hopkins, Asst. Surgeon, is granted leave of absence for six months. By direction of the Secretary of War. Par. 2. S. O. 278, A. G. O., Washington, November 28, 1890.

Capt. James E. Pilcher, Asst. Surgeon, now on leave of absence, will report in person to the commanding General, Div. of the Atlantic, for temporary duty at Ft. Columbus, New York Harbor, during the absence on leave of Capt. William E. Hopkins, Asst. Surgeon. By direction of the Secretary of War. Par. 3, S. O. 278, A. G. O., Washington, November 18, 1890.

First Lieut. Eugene L. Swift, Asst. Surgeon, is relieved from further duty and station at Ft. McDowell, Ariz. Ter., and assigned to Ft. Thomas, Ariz. Ter., where he is now on temporary duty. By direction of the Secretary of War. Par. 15, S. O. 182, A. G. O., Washington, December 3, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 6, 1890.

Asst. Surgeon L. W. Atlee, ordered to examination preliminary to promotion.

Surgeon H. M. Martin, placed on Retired List December 4, 1890.

Asst. Surgeon A. R. Alfred, ordered to the Naval Hospital, Norfolk, Va.

Asst. Surgeon J. M. Whitfield, from hospital, Norfolk, and to the U. S. S. "Chicago."

Asst. Surgeon A. M. D. McCormick, detached from U. S. S. "Chicago," and wait orders.

Asst. Surgeon J. F. Keeney, ordered to the U. S. S. "Minnesota."

Asst. Surgeon H. N. T. Harris, detached from the U. S. S. "Minnesota," and wait orders.

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ORIGINAL ARTICLES.

FURTHER COMMUNICATION ON A CURE
FOR TUBERCULOSIS.

BY PROFESSOR R. KOCH.

OF BERLIN.

[Translated for THE JOURNAL.]

A few months ago in an address before the International Medical Congress, I described a remedy that would render animals refractory to the tubercle bacillus, and would stop the tubercular process in those already affected. Since that time observations have been made upon human beings, which are described in the following pages.

It was originally my intention to complete these observations, and to gain extensive experience with the use of the remedy, and also its preparation upon a large scale before publishing anything. But, in spite of all precautions, so much has reached the public, and such false and exaggerated ideas have been formed, that it now seems necessary to avoid further error by giving an account of the present state of the inquiry. Naturally this report can be but brief and many important questions must remain open.

The investigations have been carried on under my direction by Dr. A. Libbertz and Stabsarzt Dr. E. Pfuhl, some of which are finished and others still in progress. The necessary patients have been furnished by Prof. Brieger from his policlinic, Dr. Levy from his private surgical clinic, Geheimrath Fräntzel and Oberstabsarzt R. Köhler in the Charité Hospital, and Geheimrath von Bergmann in the University Surgical Clinic. To all of these gentlemen as well as their assistants who have helped in the observations, I wish to express my deep obligations, and to thank them for their lively interest. Without this extensive assistance it would have been impossible to have advanced the subject so far in a few months.

Regarding the origin and preparation of the remedy, I cannot now make any statement, as my work is not yet completed, and it is reserved for a further communication.¹

The remedy consists of a clean brownish liquid, that does not require any special care in keeping. In use it must be more or less diluted with distilled water and is then liable to undergo decomposition, from bacterial vegetation; it then becomes cloudy and is no longer fit for use. To prevent this the solution must be heated and preserved under cotton plugs, or what is more convenient, a one-half per cent. solution of phenol may be employed. By frequent heating and also when mixed with phenol it seems to lose some of its strength, especially in very dilute solutions; for this reason I have generally employed a freshly diluted specimen.

In the stomach the remedy has no effect; to obtain its action it must be injected beneath the skin. In our experiments we have employed exclusively a small syringe suggested by myself for bacteriological work; it is furnished with a small rubber ball and has no piston. Such a syringe is easily kept aseptic by washing with absolute alcohol, and to this we attribute our absolute freedom from abscess in more than 1000 injections.

After several trials we would fix the point of election, for the injections, at either between the shoulder blades or in the lumbar region. In these places the injection causes little, and usually no local reaction, and is always painless.

As regards the effect of the remedy upon man, it was apparent from the outset that he reacted very differently from the guinea pig, the animal usually employed in these experiments. A further proof of the rule that experiments upon animals are not sufficient to confirm like relations upon the human being.

Man was found to be extraordinarily more sensitive to the action of the remedy than guinea pigs. One can inject 2 ccm. of the fluid into a healthy guinea pig without causing special inconvenience. In an adult healthy man one-fourth of a ccm. will cause an intense reaction—in relation to the body weight, one fifteen hundredth of the quantity readily borne by the guinea pig.

The symptoms produced by an injection of 0.25 ccm. I have experienced myself; they were in short, as follows: Three to four hours after the injection pain in the limbs, weakness, inclination

¹Physicians wishing to use the remedy can obtain a supply from Dr. A. Libbertz, (Berlin, N. W., Lüneburgerstrasse 28, II.) who has undertaken the preparation of the remedy, with the coöpera-

tion of r. Pfuhl and myself. I wish, however, to remark that the quantity obtainable at present is somewhat small, and larger supplies only be had after some weeks.

to cough, difficult respiration which rapidly increased; in the fifth hour a chill came on that lasted one hour; at the same time nausea, vomiting, and an elevation of temperature reaching 39.6° ; after twelve hours some heaviness remained, the temperature sunk, reaching the normal on the following day. Heaviness of the limbs, fatigue persisted for some days, as did a little pain and redness at the site of the injection.

The smallest dose producing a reaction is about 0.01 ccm. (equal to a cubic centimeter diluted one hundred times) as determined by numerous observations. Most men react to this dose, with slight pain in the limbs and fatigue lasting but a short time. In a few, a slight rise in temperature was noted, reaching 38° , or a little above.

While such an extraordinary difference in the dose is noted between experimental animals and man, in other respects there is a great similarity.

The most important of these is the action of the remedy upon the tubercular process, of whatever kind.

I will make no further reference to its effect upon animals, as that would carry me too far, but will at once turn to the extraordinary effects produced upon tubercular human beings.

The healthy man reacts, as we have stated, to 0.01 ccm. slightly or not at all. Sick people who are not tuberculous react in much the same way, as we have shown by abundant observations. In the tuberculous, however, the relation is very different; when the same dose (0.01) is injected² a strong, general as well as local reaction is noted.

The general reaction consists of fever, which is usually ushered in by a chill, the body temperature reaches 39° , sometimes 40° , and occasionally 41° . This is accompanied by pain in the limbs, coughing, great fatigue and often nausea and vomiting. In a few cases slight yellowing of the skin, and in some others a measles like eruption on the breast and throat. The attack as a rule begins from four to five hours after the injection and lasts for from twelve to fifteen hours. Exceptionally it may appear later and run with less intensity. The patients are but little affected by the attacks, and as soon as it is over feel reasonably well, commonly better than before.

The local reaction can be better observed upon those whose tubercular process can be seen,—for example, lupus. In these, changes appear that show the specific anti-tubercular action of the remedy to a surprising degree. Some hours after an injection into the back, far removed from the diseased point, the lupus patches begin to swell and redden, commonly before the beginning of the chill. During the febrile stage the swelling and redness increase, and may reach a high

grade, so that the lupus tissue appears brownish-red and necrotic. The swollen and reddened lupus mass is often surrounded by a sharp white ring, about one centimeter broad, which in its turn is surrounded by a broad red ring. When the fever subsides the swollen lupus tissue begins to go down, and in two or three days it may disappear. The lupus masses are covered with a soft exudate that rapidly dries in the air, forming a crust, which falls off, in some cases after a single injection, leaving a smooth red cicatrix. Usually several injections are required to remove the lupus tissue,—but of this later. It is important in this connection to note that the process limits itself strictly to the affected portions of the skin; the smallest and most obscure masses are brought into view, while the cicatricial tissue in which the lupoid process has ceased are not affected.

The observation upon lupus is so instructive and convincing as to the specific action of the remedy, that every one who wishes to employ it, ought to begin his observations upon a case of lupus.

Not so apparent, but still objective in character is its action, in tuberculosis of the joints, lymphatic glands and bones; in which increase of pain, swelling and reddening of the superficial parts can be seen.

The reaction in the internal organs, the lungs for example, is not so apparent unless we assume that the increased cough and expectoration are evidence of such local action. In these cases it is the general reaction that is dominant. We may, however, assume that here changes are produced like those directly observed in lupus.

The reaction above described invariably takes place after a dose of 0.01 ccm. if a tubercular process is present any where in the body. I do not think I go too far if I assume that we have in this remedy a most important aid to diagnosis. One will be in a position to diagnosticate doubtful cases of phthisis, before bacilli or elastic fibres present themselves in the sputum and before the process reveals itself by physical signs. Glandular affections, latent bone tuberculosis, doubtful skin tuberculosis and the like, will be by this means easily recognized. In apparently cured cases it will be possible for us to definitely determine if the diseased process has ended its course, or if some diseased spot remains from which, like a spark under the ashes, the diseased process may be again lighted up.

Its power to cure is, however, of greater importance than its diagnostic relations.

In describing the changes produced in the skin affected with lupus by a subcutaneous injection of the remedy, I said that after the subsidence of the swelling and redness the parts did not return to their former condition, but that they were more or less changed. In some cases after a sufficient injection the mass dies and is later cast off. In

²To children from three to five years of age we have given one-tenth of this dose i.e., 0.001; to very weak children only 0.0005 ccm., with this last vigorous but not dangerous reaction has been obtained.

other cases there seems to be a melting down of the tissue; in these cases repeated injections are needed to complete the process. In what way this action is brought about is not yet certain, as the necessary histological observations have not yet been made. One thing, however, is certain, that the tubercle bacillus is not killed, but the tissue surrounding the bacilli is alone affected. Beyond this, as is shown by the redness and swelling, we have deep seated changes in the nutrition of the tissues, which according to the use of the remedy destroys them quickly and deeply.

To recapitulate, the remedy does not destroy the bacillus tuberculosis, but the tuberculous tissue, and this clearly defines the limits that bound the action of the substance. It only has the power to affect living tuberculous tissue; dead tissue like caseous masses, and necrotic bone are not affected; in the same way it has no effect upon dead tissue destroyed by itself. Such dead masses may contain living tubercle bacilli, which may be cast out in the necrotic tissue, or under special conditions may again infect neighboring healthy tissue.

This peculiar action of the remedy is most important in order that its therapeutic power may be made as useful as possible. For this purpose the living tuberculous tissue must first be destroyed, and then everything possible should be done, for example by surgical means, to remove the infected tissue; where this is not possible, and the organism must itself eliminate the destroyed tissue, the remedy should be repeatedly employed to protect and prevent the reinfection of healthy tissue.

While the remedy destroys tuberculous tissue, and only operates upon living tissue, it has another and very peculiar property, namely, it may be given in rapidly increasing doses. This may be referred to simple toleration, but when one thinks that the initial dose may be increased 500 times in three weeks one can hardly refer it to tolerance, as no similar remedy of equal potency acts in this way.

The phenomena must rather be explained by the fact that at first considerable living tuberculous tissue is present, but after each injection it becomes less and less, so that there is a rapid decrease in the reaction even with increasing doses. As soon as the patient reacts in the same way as one free from tuberculosis then we may assume that all infected tissue has been destroyed. The treatment should then be continued in increasing doses, with interruptions to prevent reinfection, as long as tubercle bacilli are present in the body.

If this conception and the inference that follows it is correct the future alone will show. They are conclusive so far as I am concerned, in determining the method of treatment, which in our experiments was as follows:

To begin with the simplest case, namely, lupus,

we have always injected a full dose 0.01 ccm. and allowed the reaction to follow; after one or two weeks another injection of 0.01 ccm. and so on until the reaction became weaker and finally stopped. In two of these cases, with facial lupus, a smooth scar was obtained in one case after three injections and in the other four. The remaining cases, still under treatment, are greatly improved. All of these patients had had the disease for many years and been treated in various ways, but without result.

In a like manner the glandular bone and joint tuberculosis were treated, receiving large doses at comparatively wide intervals. The results were the same as in lupus, rapid healing in the recent and mild cases, and slow progressive bettering in the severe forms.

The relational conditions are very different in the phthisical, that constituted the bulk of our patients. Patients with tuberculosis of the lungs are much more sensitive to the action of the remedy than those affected with surgical tuberculosis. The early dose of 0.01 ccm. was soon reduced for the phthisical to 0.002 or even 0.001 ccm., and to this they strongly reacted; from this small beginning dose, it may be rapidly increased to a quantity that is well borne by other patients. We recommend that the phthisical be given 0.001 ccm.; when this is followed by an increase in temperature, the same dose should be given daily until no further reaction is produced; then the dose should be increased to 0.002 until this no longer produces a reaction, and so on, increasing the dose 0.001 or at most 0.002 until 0.01 or higher is reached. This mild course is imperative in feeble patients. When this method is employed the patient may be brought to rapidly tolerate large doses, without special rise of temperature. Some strong phthisical patients were treated with large doses to begin with, which were rapidly increased; in these cases a favorable result was more quickly obtained. The action of the remedy in phthisis generally expresses itself by an increase in the cough and expectoration; later these lessen and in the favorable cases ultimately disappear, the expectoration losing its pus and becoming mucus. The number of bacilli (and only those patients who presented bacilli in the sputum were selected) decreased only when the expectoration became mucus in character. Then they occasionally disappeared, to be found again from time to time, until they were no longer present. At the same time night sweats ceased, the general appearance of the patients was improved and they increased in weight. Those cases in the early stage were freed from all symptoms in from four to six weeks, so that they can be regarded as cured. Also patients with not too large cavities were nearly healed. Only in those cases where there were large cavities, no objective betterment could be seen, but in these there was a lessening of expect-

toration, and an improvement in the subjective conditions. From these observations I must affirm that *this remedy will cure phthisis with certainty in the early stage.*³ Perhaps it may also be successful in the cases not too far advanced.

Phthisical with large cavities, or those with complications: for example, those whose cavities are infected with the micro organisms of suppuration or who present incurable changes in other organs, will only exceptionally obtain benefit from the use of the remedy. For a time even these cases may be benefited. One must however think that in these cases the original process is affected in the same way, but the power to throw off the dead mass by a secondary suppurative process is lost.

Involuntarily the thought is awakened as to whether the new method cannot be used in connection with surgical measures (*i.e.*, operation for empyema) or other curative means, in the relief of these severe cases. I most strongly advise against the routine use of the remedy in all tubercular processes, without discrimination. The simplest will be the treatment of beginning phthisis and surgical affections, but in all other forms one should employ every resource of medical art; the treatment should be individualized, and all other methods should be employed to aid the action of the remedy. In many cases I have received the decided impression that careful nursing of the patient exercised a most important effect upon the curative result, and for that reason I would recommend the employment of the remedy in special institutions, where the patients can be carefully observed and well cared for. How far the present methods of cure, mountain climate, open air treatment, etc., may be usefully combined with the new measure is not yet determined; but, I believe that these curative factors may be usefully employed in many cases, especially in neglected and severe forms as well as in the convalescent stage.⁴

The important point in the new cure is its earliest possible application. The object should be to employ the treatment in the beginning stage of phthisis when it may completely eradicate the disease. Therefore it cannot be too strongly stated that the early diagnosis of phthisis is now of greater necessity than ever before. Until now the presence of the tubercle bacillus in the sputum, has been regarded more as an interesting side issue, that confirmed the diagnosis, but was of no further importance to the patient, and for that

reason it is often neglected, as I have recently determined in several phthisical patients, who have been under the care of several physicians without having their sputum examined. In the future this must be different. A physician who neglects any diagnostic means and especially if he fails to examine the sputum that an early diagnosis may be made, fails in his duty to the patient, as upon this depends the early application of the specific treatment, and perhaps the life of the patient. In doubtful cases an injection for diagnostic purposes should be made.

Then only will the new curative agency become a blessing to suffering humanity, when all cases are treated in their incipency, and we shall no longer see those severe and neglected cases, that now form such fruitful sources of infection.

In closing, let me remark that I have purposely omitted statistical tables and descriptions of special cases in this article, as the physicians who have furnished patients will themselves undertake the publication of results, therefore I wish to make this communication as objective as possible that I may not anticipate their communications.

CASES TREATED BY KOCH'S METHOD.¹

PROFESSOR VON BERGMANN'S CASES.

Dr. v. Bergmann's anxiously expected address and exhibition of cases treated by Professor Koch's method took place on Sunday evening, November 16, before a numerous and select audience of invited guests. The Minister of Public Instruction, Herr von Gossler, and amongst other celebrities Professors Virchow, Gerhardt, Liebreich, Waldeyer, and Olshausen were present. In beginning his address Professor v. Bergmann referred in stirring words to the intense emotion which, since Koch's publication, had seized not only suffering but also healing humanity. He then discussed the cases that had come under his own observation, which were cases of, 1, lupus, 2, glandular tuberculosis, 3, tuberculosis of the joints and bones, and 4, tuberculosis of the larynx. Five lupus patients were exhibited, to whom a subcutaneous injection of one centigram had been applied the same morning between 8:30 and 9:30 A.M.; all these five cases showed the general and local symptoms spoken of by Koch—namely, fever and inflammation. The lecturer remarked that the unerring certainty with which an attack of fever, accompanied by rigors, followed the application of the remedy, was of the highest interest from a medical point of view. This general reaction was invariably accompanied by a marked action on all tuberculous parts of the body—visible in cases of lupus. Of the patients exhibited, some showed tempera-

³This statement requires modification in so far, that up to the present no conclusive experience can be adduced to show that the cure is lasting. It is apparent that relapses are not excluded. But we may assume that they may be overcome as rapidly and easily as the first attack.

On the other hand it may be possible that cured patients may have acquired an immunity similar to that found in analogous infectious conditions. But, for the present this must remain an open question.

⁴As regards brain, laryngeal and miliary tuberculosis, the material at our command has been too small to furnish proper experience.

¹ British Medical Journal.

tures of 41.0° C., and even higher. The lupus spots were enormously swollen and very red, this reaction being the more marked in proportion as the case was a more recent one. One of the patients had suffered from the disease for twenty years and one for twenty-nine years. On Sunday morning, before the subcutaneous injection was made, Professor Gerhardt had designated the first of these cases as a slight and superficial one; nevertheless, an enormous reaction followed the injection, tending to prove that there was more lupus than had yet been found, and that Koch's remedy finds out the most secret places and nests of tubercle bacilli.

The next five patients exhibited were treated in presence of the assembly by Stabsarzt Dr. Pfuhl, subcutaneous injections in varying doses being applied to the back. One of the patients was a sickly looking lad of 17, who had been under Professor v. Bergmann's and the late Professor Volkmann's treatment for the last fourteen years. "Now the poor fellow will have relief at last," said Professor v. Bergmann, smiling.

The next set of three patients exhibited had been under treatment for some time, and had gone through a course of subcutaneous injections, the reactions becoming weaker after each injection. Here partial cure was already visible; but the application will be continued until no reaction at all can be observed.

Professor v. Bergmann resumed his address by remarking that the value of the remedy was enhanced by the control experiments that could be made in the case of healthy subjects, or those affected by other diseases, which were all-important for diagnosis. He illustrated this by exhibiting a patient suffering from an affection of the cheek, which might have been considered tuberculous. The experimental subcutaneous injection produced no feverish reaction. Probably this case was syphilitic.

The second group exhibited contained two cases of glandular tubercle, in the person of two little girls of scrofulous appearance. Here the reaction was marked.

The third group comprised sixteen cases of tubercle of the joints and bones, with suppuration, fistulae, and similar phenomena. Some of these, to whom a first injection had been applied, showed the usual symptoms: the joints were much swollen and highly colored, and movement was scarcely possible. Others had been treated by repeated injections. One of these, who suffered from consumption and tuberculous inflammation of the knee-joint, was so severely affected by the injections (intermittent pulse, faintness, etc.), that there seemed cause for anxiety. He had, however, recovered, and was progressing favorably.

The last patients exhibited excited special interest, as they were cases of tubercle of the

larynx. Professors Gerhardt and von Ziemssen had in both cases found serious lesions of the larynx. And here the remedy showed its diagnostic value as a means of distinguishing cancer from tuberculosis.

In summing up the cases exhibited, Professor v. Bergmann said that from the local and general phenomena which had already shown themselves the prognosis was decidedly favorable. Nevertheless, in many cases surgical operations would still be unavoidable, as abscesses and dislocations could only be cured by mechanical means. In these cases it would be of the highest importance to guard against relapse by the repetition of Koch's treatment, and thus both methods united gave the brightest prospect of success.

DR. W. LEVY'S CASES.

The *Therapeutische Monatshefte* publishes an extra supplement containing an account of cases treated by Koch's new method in Dr. Levy's clinic. The report, written by Dr. H. Feilchenfeld, Levy's assistant, is here summarized: The treatment was begun on September 22, that is, not quite two months ago. This comparatively short time has sufficed to show in what cases complete recovery may be hoped for, and where only amelioration of symptoms can be expected. No definite opinion could be formed as to the length of time necessary for perfect recovery. Feilchenfeld cites three cases of lupus, one of which is a sort of test case, and has already become celebrated in the history of the investigation. In this case the phenomena of reaction all took place in the typical form, with which Koch's paper has made the world familiar. A complete cure seemed to have been effected—it was as though the diseased tissue had been cut away with a chisel. Further subcutaneous injections, however, proved that the end of the trouble had not been reached, and that in spite of superficial cicatrization there was plenty of tuberculous tissue below awaiting destruction. Even now the patient cannot be considered cured. In a second case of lupus the general condition of the patient became much worse after each subcutaneous injection, and severe pains persisted, especially in the bones of the affected arm.

A third case of lupus is interesting, because of all cases treated in Levy's clinic it is the one furthest advanced towards recovery. In this case the subcutaneous injections no longer produce a reaction. Here too, however, Dr. Feilchenfeld speaks of "provisional cure" only, as no final verdict can be given after two months in a disease which runs its course so slowly as tuberculosis does.

In cases of tuberculosis of the bones and joints, cures were effected, that is, no reaction followed even large doses of the subcutaneous injection. The same result was obtained in cases of glandu-

lar tuberculosis. Turning to his cases of consumption, Dr. Feilchenfeld states that three patients in the first stage of phthisis were dismissed as cured, their sputum having been found free from bacilli, and the auscultatory signs having considerably decreased. Dr. Feilchenfeld, however, does not consider these two facts a complete proof of definitive cure. Bacilli may disappear from the sputum to reappear after a time.

As regards the more advanced forms of phthisis, where cavities have already formed, Dr. Feilchenfeld remarks that no complete recovery has been observed. But the general symptoms of the disease—night sweats, etc.—disappeared promptly. Even in the worst cases there was a diminution of expectoration. There was no increase of weight, even where the general condition was much improved. On the other hand, no loss of weight was observed, even in the most advanced and desperate cases.

PROFESSOR FRAENTZEL'S CASES.

At Monday's meeting of the Verein für innere Medicin, Professor Fraentzel gave an account of the cases treated in his clinic by Koch's method. He divided them into two classes: 1, those in the first stage of phthisis; 2, those in advanced stages of the disease (disintegration of tissue, cavities, etc.). In the latter group no change of condition could be observed. Two patients died during treatment; their cases were desperate from the beginning. The post-mortem examination showed no indication of the commencement of recovery. Fraentzel utters a word of warning against using large doses at the beginning of treatment in advanced cases, and cited one case in which death ensued after twenty-four hours. As regards the first group of patients—early stages of consumption—Professor Fraentzel was able to record decided improvement. Expectoration was easier and more abundant after the injection, while the cough decreased. The general condition visibly improved; the appetite became keener, the weight increased, and the night sweats disappeared. The microscopic examination of the sputum demonstrated first a decrease, and secondly, a change of the bacilli. They seemed stunted; nevertheless, their vitality was not destroyed. Fraentzel is of opinion that the treatment, even in the most successful cases, must be continued for a considerable time to guard against relapse.

PROFESSOR GERHARDT'S CASES.

In a clinical lecture given in the presence of many distinguished physicians on Tuesday, November 18, Professor Gerhardt gave an account of his experiences with Koch's remedy. He exhibited three cases specially fitted to illustrate the progress made in the diagnosis and treatment of tuberculosis. The first case was one of tuber-

culosis of the throat, in which various methods had been tried without effect. On Sunday, 2 milligrams of Koch's fluid were injected, and a decided reaction was observed on Monday. Considering the success which has attended a similar case in v. Bergmann's clinic, Professor Gerhardt thinks recovery very possible. The second case was in the initial stage of consumption, whilst the third patient showed an affection of the apex of the lung which aroused suspicions of tuberculosis. Tubercle bacilli had not been found, but this is no absolute proof of the non-existence of tuberculosis. Koch's fluid was injected on Sunday; no reaction ensued, which is a conclusive proof that the affection is not tuberculous. Professor Gerhardt, in conclusion, spoke some serious words of warning. He said it was absurd to imagine that Koch's treatment was of so simple a character that by subcutaneous injection consumption could be simply driven out of the body; on the contrary, in order to apply it successfully, the physician would have to use the most careful discrimination.

THE FIRST ENGLISH CASE OF LUPUS TREATED BY KOCH'S METHOD.

The following information, dated Tuesday, November 18, is forwarded to us from Berlin, by Mr. Malcolm Morris and Dr. Pringle: The patient, who is in a private room at the Royal Clinic, under the care of Professor v. Bergmann, is a man aged nearly 22, who has been under Mr. Morris's care since the beginning of 1885, when lupus of the face first developed. Previous to this he had suffered from various strumous manifestations. Since the lupus first showed itself on the nose it had appeared on the gums and palate, and had been several times operated upon with benefit. Caseous glands have also been removed on five occasions. The patient, who appeared to be in perfect general health, was first inoculated on Sunday morning, November 16, at 8:45 A.M., Professor Koch himself being present. His temperature, taken 15 minutes after inoculation, was 36° C., in eight hours it had attained its maximum of 40.15° C. At this time the patient was suffering from extreme *malaise*, headache, dyspnoea, nausea, and thirst. The changes in the parts affected by lupus were very remarkable, the local manifestation exactly corresponding to those descriptions already published. Gradual fall of temperature ensued till it reached 37.6° C., at 3 A.M., on November 17, attended by abatement of all the constitutional symptoms. The temperature again rose to 38.6° at 3 P.M., and had since gradually declined to normal. The local alterations, which demand more minute descriptions, will be communicated with the history, temperature chart, and other details regarding the case as soon as the treatment is completed.

SURGICAL RELIEF FOR BILIARY OBSTRUCTION.

Read in the Section of Surgery and Anatomy, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY HENRY O. MARCY, A.M., M.D., LL.D.,
OF BOSTON.

The surgery of the gall-bladder opens another and an extremely important field for operative interference. Biliary obstruction has been, from the earliest times, recognized as a cause of most severe suffering attended with the gravest dangers.

With very few exceptions, operations for its relief have been considered beyond the *pale* of surgical domain, until within a few years, and even now, although abdominal surgery is almost universally accepted as justifiable, in a multitude of varying conditions, only a very few surgeons have attempted operation upon the gall-bladder.

My own experience is limited to the following cases which, inasmuch as they illustrate a variety of conditions, are of sufficient importance to put upon record.

Case 1.—Dr. W—, aged 72, a physician of exceptional intelligence, had clearly diagnosticated repeated attacks of suffering, extending over a number of years, as due to biliary obstruction, a gall-stone. Although somewhat jaundiced, the more prominent and dangerous symptoms were caused by the continuous vomiting. The attack preceding the operation, which was performed July, 1887, was more severe than any previous one, causing imminent danger to life. Pulse rapid, temperature slightly above the normal, no food retained upon the stomach, rectal alimentation maintained for several days, emaciation pronounced. There was pain and tenderness just to the right of the median line, and upon pressure an ill-defined enlargement was felt.

Upon section, the base of the liver was easily found, and a rather small, undistended gall-bladder, intimately bound to the transverse colon by old and firm adhesions. The finger, carried in the direction of the common duct, easily detected a gall-stone of considerable size, which was dislodged and retracted into the lower portion of the gall-bladder. A prolonged attempt at separation of the adhesions was made, with considerable loss of blood from the divided tissues, which were exceptionally vascular. After consultation with Dr. Worcester, who ably assisted me in the operation, it was reluctantly determined unwise to proceed farther, and the wound was closed. Marked relief followed for a few days; the exploratory wound healed by first intention. The old symptoms, however, soon supervened, followed by death. A careful autopsy was made by Prof. Frost, of Hanover, who reported that a calculus, about the size of a walnut, was in the greatly dilated common duct, producing complete occlusion. Although the hepatic structure was not

materially changed, yet the old adhesions, binding the gall-bladder to the transverse colon, were so extensive, that the post-mortem dissection was made with difficulty and, on this account, further operative measures would have been, in his judgment, unjustifiable.

Case 2.—Mrs. R—, in middle life, extremely fleshy, a patient of Dr. Cunningham of Cambridge. When seen by me in consultation, persistent vomiting had continued for several days, ushered in by extreme pain in the right hypogastrium. She was slightly jaundiced, pulse small and rapid, condition considered one of extreme danger; referable to biliary obstruction. She had had several previous attacks less severe. On section, extensive adhesions were found, binding a moderately distended gall-bladder to the surrounding parts completely overlaid, as in the previous case, by the transverse colon. With some difficulty I dislodged and retracted a biliary calculus from the common duct, but deemed it unwise to attempt its removal, because of the impossibility of freeing the gall-bladder and bringing it within the lips of the wound. Rapid recovery followed with primary union, a free flow of bile into the intestine ensued, and the patient now, at the expiration of about two years, continues well.

Case 3.—Mr. J—, formerly a sailor, aged about 45, had been under my care for some months, suffering from supposed cancer of the pylorus. He developed rather rapidly a fluctuating tumor in the region of the gall-bladder, of fist-size. Was considerably emaciated and markedly ænemic. This condition made the former diagnosis doubtful, and operative measures were advised and gladly accepted. Entered hospital October, 1887, and assisted by Drs. Holt and Nelson I made an exploratory incision. Immediately upon opening the abdomen, the cystic tumor pressed into the lips of the wound. The tumor was carefully attached to the peritoneum by a double row of continuous tendon sutures and then opened. About six ounces of a whitish, mucopurulent fluid escaped, without a seeming trace of bile. Exploration detected no trace of biliary calculi; the finger carried deeply was brought in apposition to a thickened mass in the region of the outlet of the stomach. A large double drainage-tube was inserted, about which the lips of the wound were closed. It was washed out for some days with a weak solution of sublimate; the secretion amounted to several ounces daily. Contraction slowly followed, leaving a sinus which closed only after several weeks. Marked improvement followed for a time, but death occurred some months later, and the autopsy revealed primary cancer of the stomach, with a secondary deposit studding the liver.

The cystic duct had been closed from the secondary changes which had ensued; the interesting specimen is here shown.

Case 4.—Mr. M—, aged 45, of regular habits, a healthy, hard-working man until eighteen months previous to operation, April 29, 1889. Had developed rather rapidly a well marked jaundice, with frequently returning intermittent attacks of excruciating pain followed by vomiting. Had been supposed by his physicians dying of cancer of the liver. Skin dark copper tint, emaciation not extreme. Stools light gray, urine dark brandy color. Diagnosis, occlusion of the common duct, possibly gall-stone. I was assisted in the operation by Drs. Didama and Jacobson of Syracuse, N. Y., and Dr. Nelson of Boston. Present Drs. Warner, Cunningham, and others. Liver was enlarged and very darkly colored. Gall-bladder distended, extensive adhesions to the surrounding parts. United it to the lips of the wound as in previous case and incised. Careful probing detected no evidence of stone, and it was determined that the cystic duct was occluded from an inflammatory process. Put in drainage-tube and closed the wound about it without much expectation of benefit. A free discharge followed with continued and rapid improvement. Jaundice lessened and when seen in September had entirely disappeared. The wound closed, appetite good, strength, in large measure, returned and he does light work. He continued to gain strength until March of the present year when jaundice returned with a repetition, in a minor degree, of former sufferings.

Case 5.—Mrs. P—, aged 40, has had several attacks of biliary colic of a serious character, accompanied with jaundice. The last attack preceding the operation occurred in August, 1889. Life at that time thought to have been imperilled, she has not been quite well since. Entered my private hospital. Has severe local pains, some vomiting, markedly jaundiced; dark urine; clay-colored stools. Thick abdominal wall, beneath which a considerable sized fluctuating tumor is well defined, the base of which is quite on the line with the umbilicus. Operation October 26, 1889, assisted by Drs. Clark and Nelson.

Immediately upon dividing the peritoneum, the cystic growth distended the lips of the wound. It was attached to the peritoneum by a double row of tendon sutures and incised. Ten ounces of thin, light colored bile escaped, floating out with it a gall-stone, the size of a large almond. Careful probing revealed the presence of another calculus in the common duct. All effort at dislodgment failed, and as much force as was deemed justifiable was used in the attempt to crush it, but without avail. The bladder was washed out with a sublimate solution, the stitches cut away, the wound packed with a sponge after having somewhat forcibly drawn the gall-bladder through it. Even this procedure did not enable us to seize and remove the calculus. I then divided the walls of the duct with scissors, and everted

its edges from over the roughened calculus which was even then removed with difficulty. The thickened mucous membrane of the duct and bladder was joined by a fine continuous tendon suture, and in like manner the peritoneal edges were carefully coapted, while over all a third layer of suturing with tendon, a continuous sero-serous stitch intrafolded the edges of the entire wound of the viscus measuring about four inches. The abdominal wound was closed by buried animal sutures, in the usual manner, and sealed with iodoform collodion. Free vomiting of a large amount of bile followed the recovery from ether. Rapid convalescence ensued without incident, and the patient remains vigorous and active. This rough mulberry-looking calculus, grape-size, was the offending member, weighing when dried fifty-nine grains.

A brief review of the history of the surgical measures devised for the relief of biliary obstruction is of great interest and value. Thudicum reports that Johannes Fabricius removed gall-stones from the bladder of a living subject in 1618.

Monsieur Petit of Paris first published his admirable memoir, on the diseases of the gall-bladder in 1743. I review, at considerable length, his article, found in the *Memoires of the Royal Academy of Surgery*,¹ since nothing more valuable, even to the present, has been published upon this interesting subject. In the first part of his contribution, he analyzes with remarkable clearness the differentiation of the varying conditions of the obstructive diseases of the biliary passages. He cites a long series of interesting cases occurring under his own observation, supplemented by a report of autopsies. He clearly defines clinical distinctions between abscess of the liver and the distention of the gall-bladder as follows. "Fluctuation in consequence of retained bile appears suddenly, in an abscess it is some length of time before it is apparent; in the one it is suspected before it is recognized; in the other recognized before suspected. In the one there may be doubt as to the point of fluctuation, while in the other it is known at once by the touch." He points out very clearly the dangers from operative measures which he thinks would be necessarily fatal if the contents of the gall-bladder should escape into the peritoneum, and as a consequence restricts all operative measures to the class of cases where inflammatory changes have caused adhesion of the cyst to the peritoneum.

He analyzes these changes with the closest scrutiny in order to make definite, as far as possible, such conditions before operation and then states, "What I have observed should moderate the ardor of young men who desire always to cut, but should therefore an unwise timidity cause them to let pass the occasion of operation in cases

¹ Tom Premier, 1781, Page 265, 56, etc.

where they are persuaded the tumor is caused by dilation of the gall-bladder, occasioned by retention of the bile? If the observations on the first two cases show that a few of these tumors cannot be opened except at the risk of the life of the patient, those on the third case show that there are those cases which may be opened without danger." . . . "If convinced that the tumor is adherent, that the life of the patient is in peril, we should not hesitate to open the bladder, for we should not wait for nature to perform miracles. It is true she does commence, since she causes the adhesion, and opening the gall-bladder without adhesion is always fatal, but it is the duty of the skilful surgeon to observe nature and to profit thereby, to seize upon the favorable moment to act himself, when he sees that nature needs his aid, and that she cannot complete what she has commenced without it. If we can be assured of the adhesion, then we may open without danger the tumors which are found in these parts, and then shall we add two new operations to surgery, one, in cases where the retention of the bile is extensive and danger to life imminent, the other, lithotomy, or extraction of stones from the gall-bladder. The existence of the stone and adhesion being assured, the operation is without danger. It is in just these cases that the skillful surgeon can show his genius. We can pass the sound into the urinary bladder for determining stones in it, why not pass the sound into the gall-bladder for the same purpose, and if stones are found, why not extract them as from the urinary bladder? If we can without rashness open the gall-bladder when it is adherent, we can pass the sound without rashness, and if stones are found there, what reproach should be to him who does not dare to extract them, and what praise should be given to the surgeon who would remove them?"

Petit then gives a series of interesting illustrative cases in detail, one of which is that of a woman, 37 years old, previously vigorous, where a tumor of the gall-bladder supervened after an attack of biliary colic. This increased in size, until it extended even to the crest of the ileum, suppuration and discharge followed, with the escape of seven or eight gall-stones. Six months after, the patient came under Monsieur de la Pegroné. At this time the discharge was abundant, of purulent character, mingled with bile. After careful probing of the fistula, he made an incision about three inches in length, extending to the middle of the right rectus muscle, which was followed by the escape of a considerable quantity of pure bile. Without difficulty a sound was carried into the gall-bladder to the depth of about four inches which he believed entered the common duct, in which location he thought a small stone was lodged and displaced. He reports the case two years later, the fistulous tract

remaining through which is a free escape of healthy bile, and the patient appears to have entirely recovered her former health.

Case 11.—Observed by Monsieur Sarrau. A woman, aged 64, had colic, followed by complete jaundice. A tumor appeared in the right hypochondrium which finally opened spontaneously, leaving a fistula, which, from time to time, discharged. At the time of operation the fistulous opening was at the side and a little below the umbilicus. The sound entered the fistula to some distance, beneath the muscles of the abdomen, where was felt a hard foreign body.

An incision was made upon it, and a biliary calculus four inches long by three in circumference was withdrawn. Upon the opposite side, at the left of the linea alba, was felt another mass at the depth of an inch and a half, from which was extracted a second stone by the prolongation of the first incision. Complete cure followed in about two months.

Case 12.—Reported by Monsieur Habert, Docteur de Sarbonne. A woman, having been jaundiced for a long time, with a very considerable tumor in the right hypochondrium, after a severe attack of colic accompanied with convulsions, passed by the bowel a gall-stone, weighing three and a half drachms, two inches and a half in length, one and a half in diameter, three and a half in circumference, polished at its ends in facets. The tumor diminished in size, and health was slowly reestablished.

Petit's work was discussed by some of the leading surgeons of his time, with little resulting profit to sufferers, and in large measure was forgotten, even Richter, who published a half a century later, making no reference to it, in his monograph upon the subject. The latter made original studies upon jaundice and the causal conditions. He determined that the general pigmentation of the tissues might occur without obstruction to the free flow of bile from the gall-bladder, and also that the outflow might be entirely prevented and the jaundice-state not supervene. The more common cause, he believed, lay in a perverted action of the liver, dependent upon a derangement of the hepatic circulation. He gives, however, in symptomatic detail a case of obstruction in the common duct from a calculus which went on under his care to death, and figures the specimen, without the hint of a possible relief from surgery. As an interesting illustrative case I quote the report of the autopsy.²

"Mr. S., gouty diathesis, age 40. Troubled with jaundice four years. In hospital two weeks. The gall-bladder was five inches long and two broad, quite full of dark bile and contained thirty gall-stones. The ductus choledochus and the

² Aug. Gottlieb Richter, M.D., Prof. Med. University, Goettingen, 1793.

parts about were preternaturally distended. On cutting into the substance of the liver a very great quantity of dark brown bile issued as from a sponge, of the same nature with that which was found in the gall-bladder. There was a stone in the ductus choledochus which, on account of its uncommon size, I have caused to be engraved on the annexed plate. It weighed three ounces and five drachms. All around the stone there was fluid bile, so that this fluid had evidently passed by the stone into the duodenum. It fell into three pieces on being taken out. The external surface resembled a very firm extract of liquorice. On some places there are evident marks of smaller stones adhering to it. The thick end of the stone was in the duodenum, the most pointed was turned towards the neck of the gall-bladder." He gives another case of interest as follows: "A woman died in the hospital in the highest degree of jaundice. On inspecting her body, no gall-bladder was found, but in its place only a skinny substance of a very small size, in which no cavity could be discovered. The whole liver was full of white concretions, apparently of the nature of calcareous earth, of different sizes, from that of a cherry to that of a pea, which floated on water. . . . Most of the concretions lay under the external membrane, some few in the substance of the liver. These probably contained the irritating matter which occasioned the jaundice."

He concludes by stating, "that real obstructions are very seldom the cause of jaundice; where they do occur, they occasion an incurable disease, for this cause neither can be discovered, or removed." . . . "If stones are sometimes the cause of the jaundice, they act probably by occasioning irritation and spasm, which stops the biliary ducts, or deranges the course of the fluids in the hepatic system, and in such cases no other medicines but sedatives are of any use."

In 1798, Richter devised a litho-triptor for crushing gall-stones, and explained how the fragments could be removed by washing. In certain cases he also advocated operative measures, by first bringing about adhesive inflammation of the gall-bladder to the abdominal wall, and making an incision, as a second operation, after sufficient time had elapsed for securing a firm union.

Morgagni³ mentions a case where the common duct was as large as the stomach and contained calculi of different sizes.

Dufresne, in 1847, recommended the use of caustic over the dilated gall-bladder in order to cause adhesive inflammation before opening. About that date, Recamier advised the use of the trocar. Thudicum, in 1859, reviewed the entire subject carefully. He recommended abdominal section over the cyst, and the suturing of the unopened gall-bladder to the peritoneum, and after

sufficient time had elapsed for a firm union, completion of the section.

Trousseau furnishes an interesting chapter upon the subject, with the report of cases, advising surgical procedure after the manner of Petit, but he emphasizes the observations of Boyer who declared that there was but two signs which indicated the adhesion of the cyst, immobility of the tumor and puffiness of the integuments. In order to insure adhesion, Trousseau advised the insertion of thirty to forty steel needles with large heads which were allowed to remain three or four days. This process is repeated three times before peritoneal adhesion is supposed to be firm. He states that internal biliary fistulæ are quite beyond our means of treatment. He dismisses the subject with the acknowledgement that little good is to be expected from treatment except opiates and sedatives.

Frerichs, in his classical treatise upon diseases of the liver, offers little of value as to treatment of biliary obstruction and states, "We must never think of evacuating the contents of the gall-bladder by means of puncture, except when the rapid increase of the tumor endangers rupture, or where symptoms of hectic consumption supervene." When there are adhesions, the operation may be had recourse to without hesitation; but when there are no adhesions, or their existence is doubtful, he precautions to secure first adhesive inflammation, as advised by Bégin and Recamier. This consisted in dividing the peritoneum and dressing the wound with charpié, in order to produce firm adhesions.

It would appear that the first case of cholecystotomy, successfully performed in modern times, was by Dr. J. S. Bobbs,⁴ of Indianapolis, reported under the title, "A Case of Lithotomy of the Gall-Bladder." A woman, aged 30, tumor just inside of iliac bone, tender to pressure, diagnosis doubtful, probably ovarian. Operation June 16, 1867. Incision made between the umbilicus and pubis, omentum adherent, incision enlarged to an inch above the umbilicus on the right side, tumor five inches in length, two in diameter. Incision through the lower margin caused several small bodies, size of rifle bullets, to escape. Closed the incision of the sac by single stitch and cut the ends of the suture closely. Closed the wounds with suture and adhesive plaster. Examination of the calculi left no doubt as to their character; were of light specific gravity, and numbered between forty and fifty. The fluid was perfectly free from coloring matter. Recovery very satisfactory with no return of local trouble at the time of report, ten months after operation.

Dr. J. Marion Sims operated in Paris, April 18, 1878.⁵ Patient under observation by her phy-

³ Morgagni—Letter 37.

⁴ Transactions of Indiana State Medical Society, 1868, p. 68.
⁵ British Medical Journal, 1878, Vol. 1, page 811.

sician since previous January. Aspirated what was supposed to be a cyst of the liver, thirty-two ounces of dark-colored fluid. She continued deeply jaundiced, clay-colored stools, scanty high-colored urine. Under antiseptic precautions, an incision was made three inches in length, upon the right side, parallel to the linea alba. Cyst wall exposed, aspirated by trocar twenty-four ounces of dark fluid. Withdrew the emptied gall-bladder quite external to wound. Enlarged the incision and removed sixty gall-stones varying in size. Stitched gall-bladder to lips of wound. Operation tedious and difficult, lasting one hour and sixteen minutes. Death occurred eight days after, and at autopsy sixteen more calculi were found remaining in the duct. Dr. Sims' report of the case is in careful detail, and to the operation he gave the name since adopted, cholecystotomy ($\chi\omicron\lambda\varsigma$ —bile, $\kappa\upsilon\omicron\tau\iota\varsigma$ —bladder, $\tau\omicron\mu\iota\varsigma$ —incision).

To Mr. Lawson Tait, of Birmingham, however, is justly accorded the high honor of having established, upon a sure basis, operative interference upon the gall bladder. Up to date, Feb. 18, 1888,* he reports forty-one cases of cholecystotomy, with only two deaths, these occurring on account of malignant disease. Mr. Tait follows closely the principles first laid down by Dr. Sims. He says, "The conclusions drawn from the surgical experience of these cases, is that the entire possibilities of the treatment of gall-stone and distended gall-bladder are exhausted in Dr. Sims' original paper, and that no further extension of it seems possible."

Recently Dr. Senger reported in the *Berliner Klinischer, Wochenschrift* what he calls a new operation. The gall bladder is drawn as far as possible up from the wound, and sutured to its margin. After a day or two, adhesions will have formed and it is then opened and emptied, but immediately closed. When the wound in the bladder shall have healed, the surrounding adhesions are divided and the organ returned within the abdominal cavity. The object of these measures is of course to restore their parts to their previous normal condition, deemed by him unsafe to attempt at a single operation. Langenbeck criticises the operation as untrustworthy by reason of adhesions being too recent and offering little advantage over that of biliary fistula which can usually be readily closed if it seems desirable.

Every physician of experience has met with cases of biliary obstruction from varying causes with fatal results. These conditions are much more common than might at first appear. Many interesting clinical histories are reported in the journals, too frequently followed with verification of diagnosis by post-mortem examination. In all the pathological collections, more or less interesting specimens are found in considerable

number. In Dr. Jackson's catalogue of the Warren Anatomical Museum, in Boston, published in 1870, no less than sixty specimens, from as many different patients, are preserved, showing diseases of the gall-bladder and ducts; the larger number, of biliary calculi.

It was earlier believed that simple extravasation of bile into the peritoneum was fatal. Our present knowledge would teach that the bile *per se* may be absorbed by the peritoneum without causing much trouble, although wounds of the gall bladder are generally fatal because of attendant septic infection.

The most important question that arises in the discussion of the subject is, If cholecystotomy is a justifiable operation, when should it be performed?

Injuries.—Without doubt, in every case of wound or perforation of the gall-bladder, operative measures should be instituted without delay, since without surgical interference, there is little prospect of recovery.

Empyema.—Where empyema of the gall-bladder exists, there can be no doubt but that recourse should be had to operation, as early as the condition of the patient may seem to warrant. The temptation to aspirate should be resisted, since it is in itself dangerous and cannot afford permanent relief.

Cystic Dilatation.—When the gall-bladder has become cystic, in all cases, surgical interference is indicated. Aspiration may aid in diagnosis as to the character of the fluid, and possibly the detection of the calculus, but at the most, it is only palliative.

Biliary Obstruction.—Although patients do live an indefinite number of years with gall-stones, frequently dying of other diseases, the recurrent attacks of colic are exhaustive and often fatal in their complications; jaundice induces dangerous cholemia; suppuration may be incident upon the changes which supervene from the presence of foreign bodies in the gall-bladder. Long continued obstructive jaundice and the changes which have occurred in the tissues, is doubtless an unfavorable complication, since thereby the patient's vital power is greatly depreciated. In complete obstruction of the common duct, cholecystotomy may prevent death from cholemia by permitting the escape of the biliary fluids externally. It is clearly established that the nutrition of the tissues may be maintained without the mingling of the biliary secretion with the contents of the intestinal canal.

A very considerable class of cases where obstruction exists in the common duct, merit our serious consideration, as to the means to be established for its relief. The earlier measures which we have reviewed, where only a fistulous tract was sought to be formed externally, fail in many cases of the desired result. The theoretic

* British Medical Journal, Feb. 18, 1888.

perfection of the operation consists in the restoration of the parts, as far as possible, to their former normal conditions. For every reason a permanent fistula has very serious objections.

When the cystic duct alone is obstructed, and no bile enters the gall-bladder, an abundant quantity of clear albuminous fluid is secreted from the mucous surface more or less changed, and this is illustrated in my case number three, where the organ contained no foreign body. If the hepatic and common ducts are unobstructed, there will remain a free flow of bile into the intestine without jaundice and the consequent changes which ensue from the liver. Where these conditions exist, with considerable cystic dilatation, there remains to the surgeon a choice of operative measures, either of opening the bladder with drainage, or of removing it altogether—cholecystectomy, as recommended and performed by Langenbeck. Dr. Smith⁷ reports nine published cases of cholecystectomy where "one death only can be attributed to the operation."

Only recently Dr. Meredith⁸ states that "this operation has lately been performed with success in several instances, notably by Mr. Thornton, with excellent results. After thoroughly cleansing the interior of the injured gall-bladder, the peritoneum covering its neck is cleanly incised, and the cystic duct is then freed from its connections sufficiently to allow of its being ligatured and divided. Any bleeding vessels are then tied, and the edges of the divided peritoneum are accurately united by suture over the ligatured duct, a glass drainage tube being finally inserted before closing the abdomen."

Cholecystectomy can be favorably considered only in a very limited number of cases, where the gall-bladder has undergone marked pathological changes and its duct is so altered that the functions of this viscus are not likely to be restored. When these conditions pertain, there can be little doubt but that it better be removed, in the same manner as a cystic growth in any other part of the abdomen, yet in many cases the ease of operation and resultant safety will cause suturing to the abdominal wall, with drainage, to be preferred. When excised, the entire secreting membrane of the cyst should be carefully removed from the base, and the divided edges inverted by a continuous sero-serous suture. The operation is completed by closure of the abdominal wound, usually better without drainage.

Obstruction of the Common Duct.—In a great majority of operative cases there is obstruction of the common duct, and when this occurs from a biliary calculus, methods of procedure, to be effective, must be such as to clear the passage, in order to allow a free escape of the biliary secretion into the intestinal canal.

A calculus in the gall-bladder alone rarely causes obstruction in the common duct. On this account the surgeon should not content himself in a completion of the operation without ascertaining, as far as possible, the patency of the canal into the intestine. This cannot always be easily determined. When a calculus is found in the common duct, it may often be dislodged by gentle manipulation and removed from the gall-bladder.

When it is impossible to do this, the efforts of the surgeon should be directed towards the possibility of safely crushing it *in situ* with well padded forceps after the method of Richter, revived by Mr. Tait. It must remain a matter of individual judgment, as to how much force may be applied safely in the crushing, as well as to its method of application. If it shall prove impossible to remove the fragments by irrigation, they should be made sufficiently fine to allow their easy escape through the undilated portion of the duct into the intestinal canal. If, on account of the hardness of the calculus, or the condition of the surrounding parts, it shall be deemed unwise to attempt crushing, the further division of the duct, in order to obtain access to the stone, is advised, as illustrated in Case 5 in my series above reported.

Mr. Meredith⁹ recommends the following: "In dealing, however, with a small and friable sac which has been unavoidably much injured during the extraction of the calculi, the above procedure may prove exceedingly difficult, if not impossible. Under such circumstances, one of two courses may be followed, provided always the patency of the duct has been ensured. The first of these alternative measures consists in carefully suturing the opening in the gall-bladder and returning it into the abdominal cavity. This plan was first carried out, I believe, by myself in 1883, but my patient unfortunately died. The procedure has latterly, however, been successfully effected by other operators, and its adoption, in suitable instances, is fully justified, provided that means for drainage of the peritoneal cavity in the immediate neighborhood of the sutured gall-bladder be taken."

When this has been accomplished, we are enabled to assure ourselves of the remaining portion of the duct. Other calculi may be present, or inflammatory changes may have supervened which render it still impermeable. When we have ascertained that no further obstruction remains, we are then under the necessity of making at least a partial closure of the canal, since it is impossible to attach the widely divided lips of the duct and bladder to the abdominal wall. In this instance, we may close the wound in part and use drainage, as is more commonly recommended, or complete the operation as I did in Case 5. This latter method of complete closure of the

⁷ Greig Smith, "Abdominal Surgery," p. 552.

⁸ Lancet, April 19, 1890, "Present Position of Abdominal Surgery."

⁹ Lancet, April 19, 1890.

gall-bladder was first suggested by Sir Spencer Wells, and so far as I have ascertained it has been attempted in only three instances, one of which, as reported by Mr. Tait, was followed by a fatal result, because of escape of bile into the peritoneum.

To close so long a wound effectively would seem improbable by any method of interrupted suturing. The use of silk, as the material for suturing, no matter how prepared, would be likely to result disastrously, since it produces much irritation in the wound, which would be especially true if applied in repeated layers. The coaptation of the parts, as effected in Case 5, is simple, rapid, and makes a wound at once fluid proof; a method which I have adopted for years, in all cases of intestinal suturing. When the edges of the duct and gall-bladder have been thus coapted, the operation is finished by closure of the abdominal wound *without drainage*.

So far as I have been able to ascertain, however, the attempt at incision of the duct to remove a calculus has not been made, except in Case 5, of my series. Dr. Meredith suggests excision in his recent paper.¹⁰ "Failing of success by any of these methods, (of removing a calculus within the duct) its removal by excision, followed by careful and accurate suture of the duct might possibly be performed with success."

One of the serious, and I am constrained to believe not seldom, dangers, resulting from biliary calculi, while yet retained in the gall-bladder, results from reflexive irritation as evinced by nausea and vomiting. It is now some years since the first case of this type came under my observation, the sufferer being a physician of exceptional wisdom. His diagnosis was perfectly correct, which he desired me to ascertain in the event of his death. The calculus which I here present was free in the gall-bladder, without obstruction of the biliary, or common duct. The immediate cause of death was from hæmorrhage into the stomach, produced by continuous retching.

Some years later, a similar case came under my observation, where the diagnosis was equally clearly determined, and demonstrated by an autopsy, and where operative measures were not favorably considered by the patient and family, as well as by the consulting physician.

In cases where the common duct is permanently occluded from inflammatory or other changes, the cystic duct remaining open and the gall-bladder not especially disorganized or adherent, it remains for consideration, if a permanent fistulous opening may not be effected between it and the duodenum. In a considerable number of cases on record nature has pointed out the possibility of this method by allowing to escape, through such a fistulous tract, calculi from the gall-bladder into the intestine. In a most interesting case un-

der my observation a few years since, I urged the opening of a distended gall-bladder, since the patient was dying of extreme cholemia. The post-mortem examination showed a non-malignant, inflammatory, complete closure of the common duct.

Winiwater successfully established a communication between the gall-bladder and the transverse colon. However, in this situation, the physiological effects of the biliary secretion are lost. Dr. Gaston,¹¹ of Atlanta, Ga., reports a series of experiments upon dogs where he established a permanent communication between the duodenum and the gall bladder. Winiwater advocates a modification of his operation, by selecting some portion of the small intestine which can be brought most conveniently into apposition with the gall-bladder, since the duodenum is not sufficiently movable to be adjusted.

These are sutured by the peritoneal surfaces only, and after five or six days adhesions should have been formed sufficiently strong to admit of a permanent opening being made. Although such an operation, as far as I know, has not been attempted upon the human subject, conditions may arise in which it should be taken into serious consideration.

The technique of the operation in cholecystotomy is comparatively simple. Incision may be in varying direction. Mr. Tait advocates the division parallel to the median line, just external to the rectus muscle. In my own cases, the parietal incision has been made parallel to the ribs. After having opened the abdominal cavity, the gall-bladder is examined by the finger. If the tumor is very large, its contents may at once be evacuated with an ordinary trocar. Oftentimes the walls of the greatly distended gall bladder are very thin. In such instances it may be wise to make use of a small aspirating needle, instead of the trocar. The puncture should be made in the most dependant portion of the tumor. The abdominal cavity must be carefully protected by aseptic sponges to prevent the escape of any of the fluid into it. It may be a wise precaution, which I adopted in Cases 3 and 5, to unite the edges of the peritoneum to the gall-bladder carefully, by a running suture, prior to opening it. If the tumor is not very large, and the emptying of its contents with drainage is all that is required, suturing in this manner before opening is to be generally advised. It is easier effected with the gall-bladder tense, and gives more accurate coaptation than can be secured by uniting the gall-bladder when flaccid and empty.

The incision is now made into the gall-bladder sufficiently large to admit the finger and an examination of the contents is carefully made. Calculi may be removed by forceps, or scoop, care being exercised not to injure the delicate struc-

¹⁰ Lancet, April 19, 1890.

¹¹ Atlanta Med. and Surg. Journal, September and October, 1882.

tures. If a stone is impacted in the neck of the gall-bladder, or the cystic duct, its removal will be attended with exceptional difficulty. The right fore-finger within the abdominal cavity may aid in its dislodgment, assisted by gentle procedure of operative measures, from within the duct. This failing, crushing by forceps carefully padded, or protected by rubber may be attempted. After crushing, the fragments should be removed through the wound if possible. If crushing proves impracticable, division of the parts, until the stone is reached, should be made, followed by closure, as already described.

If, as may be found expedient in a great majority of cases, a fistulous opening is determined upon, a soft rubber drainage-tube should be inserted, and the wound dressed with absorbent material. I have used with advantage a soft-rubber double drainage-tube, inserted into a diaphragm about the size of a half dollar. These have been especially made for me in one piece.

If the common duct is patent, the fistula will voluntarily close in a few weeks. It has been used, as an argument in favor of suturing and drainage, that adhesions are formed which would render easy the division, in the line of the old cicatrix, in case of subsequent obstruction, a contingency worthy of consideration.

Cholecystotomy may be accepted as an operation already established, worthy of adoption by the surgical profession. Present experience abundantly warrants this conclusion. More brilliant triumphs await its future development, when operative interference will be advised much earlier than at present. The more serious complications which render the operation especially difficult arise from previous inflammatory attacks with their resultant pathological changes.

In the *American Journal of the Medical Sciences*, for October, 1884, Drs. Musser and Keen tabulate all the hitherto recorded cases of cholecystotomy. They number thirty-five, by sixteen different operators, with ten deaths. Three fatal cases from hæmorrhage, one from peritonitis, the remaining cases death probably due to the previous condition of the patient. Since 1884, the histories of about one hundred cases of cholecystotomy, have been published by more than one-third as many different operators. It is safe to predict that the future history of operative measures, for the relief of biliary obstruction, will furnish one of the most brilliant chapters in surgery.

One of the most serious of all the abdominal diseases, as evinced by acute pain, prolonged suffering, and great mortality, confessedly without remedy from medicine, cholecystotomy offers help to the hopeless with an attendant danger in the hands of the experienced surgeon, of as small a percentage as in ovariectomy. By present demonstration, the closure of intestinal wounds by suture, or even resection, is to be preferred

over an artificial anus. If operations upon the gall-bladder are undertaken, at a time when the organ itself is not materially changed, remaining free from adhesions to the surrounding parts, it would seem a safe conclusion that an opening, made into this viscus, should be closed with as great safety and as good reason as in that of the intestinal canal. If attempted, it should be completed with as much care and exactitude as in the latter instance.

It has been clearly shown that an *aseptic animal suture* is not only far safer when properly applied than silk, but that it also possesses the great advantage of causing an abundant proliferation of connective tissue along the tract of the buried suture. It may also be safely applied in repeated layers in order to coapt broad surfaces, in a manner unsafe to attempt with silk. After a considerable period it disappears to be replaced by vitalized tissue. Such a suture, itself *aseptic*, *aseptically* applied, in an *aseptic wound*, furnishes an important aid in dealing safely with wounds of the gall-bladder. There can be no doubt but that its proper use adds another factor of the highest importance in aseptic surgery, adding much to the safety and subsequent resulting good.

We cannot but believe that the animal suture, especially that from the tendon, properly preserved and prepared, furnishes the surgeon with an aid of the highest importance. By means of its use, the tissues in nearly all the varieties of operative wounds, can at once be coapted and retained in position without further disturbance.

COMPARATIVE VALUE OF MERCURY AND THE IODIDES IN TREAT- MENT OF SYPHILIS.

Read in the Section of Dermatology and Syphilology, at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

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"However long mercury has been employed as an antisyphilitic, general assent has not yet been gained by any doctrine concerning the utility of its administration, the results which it may produce in syphilitic patients, the period at which its administration should be begun and how long it is to be continued." So wrote Zeissl.

Burenspring says that mercury exercises a curative action on all syphilitic lesions and that it rapidly causes disappearance of the symptoms. He also says the further development of the process is not prevented by mercury; that the disease

is simply protracted, and that by reason of this, tertiary forms develop and the disease becomes incurable. He also says: "Tertiary syphilis is not mercurialism, it is always syphilis, but modified; syphilis in a system changed by mercury." He says further, that "whatever treatment is adopted, syphilis is a disease which impairs profoundly the entire organism. Cases of rapid recovery are rare. Gradual extinction of the disease is the rule, and may happen after mercurial as well as non-mercurial treatment. The advantage of mercurial treatment is that it rapidly ameliorates the symptoms of the disease and effects their recovery, but this is more than counterbalanced by a double disadvantage. Inasmuch as it impairs the entire constitution, it favors the development of destructive local forms; making the disease latent, often for months and years, and delays definite recovery. Non-mercurial treatment is often unable to prevent the severe and extensive appearance of the symptoms, particularly at the beginning of the disease, but it offers the great advantage that it never conceals the disease when it is not cured, and accelerates its definitive recovery."

Diday says, "From 1838 to 1860 I systematically dispensed with the use of mercury during the existence of the primary lesion and the first appearance of the secondary symptoms. I used mercury only in exceptional cases, when the nature of the symptoms imperatively demanded it." Finally, since 1860 he has used what is really a mixed treatment. He gives mercury occasionally—where it is needed, and says mercury is unable to destroy the virus of syphilis; and divides his treatment into "opportunistic method" and "regular method." By the former he means an effort to assist nature in her constant fight against the intruder. In experimenting on patients afflicted with syphilis he found that those to whom he gave mercury in the primary stage had the secondary manifestations of the disease in forty-three days, the period of secondary incubation was that long; while those who did not use mercury during this period had the secondary manifestations in forty-nine days. And he says that both classes of patients suffered from relapses in exactly the same manner and the same proportion.

H. Zeissl, believing that mercury did not cure syphilis, divided his hospital patients into three classes—those to whom he gave mercury on the first appearance of the secondary eruptions, those to whom iodine was given and those to whom *nothing* was given. He noted that those patients to whom he gave inunctions of mercury frequently were relieved of the manifestations of the disease in ten to fourteen days. Again, those to whom he gave iodine were relieved in from fourteen days to four to eight weeks; and, lastly, that those patients to whom he gave *nothing* had the

eruptions disappear completely in four weeks in some cases, while in others they lasted several months.

Here we have the natural history of syphilis before us. Indeed, we might have expected as much from the fact that syphilis has been treated successfully by almost all the remedies of the pharmacopœa, and from time to time advocates of sarsaparilla, stillinger, burdock, poke roots, berberis aquifolium, cundurango, manaco, hunger cures, purging cures, water cures, etc., have brought them prominently before the profession. Each would have its day; recently the majority of the profession have about discarded all of them and confined themselves to the two "old reliables," mercury and iodine.

H. Zeissl claimed "that the severe gummy syphilides appeared much earlier after the mercurial treatment than after either the iodine or expectant plan, and that relapses are much more frequent and obstinate after the mercurial treatment than after the expectant plan."

He also says that those patients may be counted as cured who, after the disappearance of the earlier eruptions without treatment, have no relapse within one year; that one year's freedom from syphilitic eruptions after the disappearance of the first secondary manifestations, said disappearance being brought about by the expectant plan of treatment—that those patients have been cured. He further says that it is only when the iodine and expectant methods have failed that mercury should be used. He also says the expectant plan takes longer to cure the symptoms, but that the relapses are less frequent than after the mercurial treatment. That treatment with the iodides is next in efficiency *after* the expectant plan, and that when the symptoms do not yield to either the expectant plan or the iodide treatment, then a small quantity of mercury causes them to rapidly disappear.

Sigmund holds almost the same views, though he has been a most pronounced advocate of mercurial treatment. He says that "science and experience positively favor the view that the proper time for general antisyphilitic treatment is in the second stage of the syphilitic development, and that at this period it should be begun *only* if important organs and systems are involved, or if the nutrition and vigor of the organism suffer seriously. In affections of mild grade and in certain organs, suitable local treatment will suffice even during the second period of the disease." He regards iodine of great value even in the second manifestations of the disease.

E. Finger, of Vienna, agrees with H. Zeissl, and gives iodine in preference to mercury in the condylomatous stage.

Kaposi says: "The more vigorous and persistent the treatment during the first acute stage, the more certainly relapses and a protracted

course of the disease are prevented." He believes in the vigorous use of inunctions of mercurial ointment.

Fournier advocates the vigorous mercurial course of treatment continuing over a period of one to three years, mercury for a few weeks or months followed by a period of rest on the "expectant plan."

M. Neisser follows Fournier's plan of treatment and says "the treatment should be chronic." He gives one "main cure," as he calls it, by inunctions, and follows it by internal administration of some of the milder forms of mercury. His "main cure" is repeated once a year for three years, but he also "attributes unusually severe symptoms to an excessive use of mercury."

Caspary says "the use of mercury is not a matter of indifference;" advises its use during the stage of eruption, but does not advocate its administration during the period of quiescence. He also says, "Vigorous treatment after the manner of Fournier, in the early stages of the disease, delays relapses—but that the relapses are very apt to be severe."

Unna is opposed to the protracted use of mercury in syphilis, and lays all the late manifestations of the disease to unoxidized mercury in the tissues. He also says that some cases of cerebral syphilis in which the patients have difficulty in walking, seem to get worse under administrations of mercury.

Rumpt says, "There are isolated cases of cerebral syphilis in which mercury seems to exert an injurious influence. In a few cases of cerebral syphilis with mild delirium, use of mercury was followed by coma which yielded to the use of iodides" 'This I can corroborate from personal experience this last year. A medical man consulted me for what was evidently cerebral syphilis. Under mercurial inunctions his cerebral symptoms got worse, and improved when the mercury was stopped and iodine given.

A gentleman from Texas also came to me with cerebral syphilis. Had had an attack of cerebral apoplexy due to syphilitic disease of the arteries. Under use of mercury he got worse, and I was compelled to stop its use and place him on the iodides alone.

M. Zeissl reports several cases in which he had used vigorous mercurial inunctions, and in which severe relapses of syphilis follow; so that now he does not give mercury until he has failed after a ten weeks' trial with iodine, commencing the administration of the iodides only after the secondary eruptions have existed for six to eight weeks. Then, if the iodides fail him, he resorts to mercury, agreeing with the opinion of H. Zeissl, "that it is not the mercury that hurts the patient, but mercury given at improper times." He says that now he continues the iodine course for six months, or at most a year, after the syphilis

has disappeared. If relapses occur he again resorts to the iodides—and if the symptoms disappear very slowly, or not at all, then he uses mercury.

In contrast with this opinion of M. Zeissl and others, Otis advises the commencement of mercury as soon as the chancre indurates, and urges its protracted and vigorous use. He reports some cases in which the use of the drug was not pushed as vigorously or as early as he thought it ought to have been, where grave tertiary lesions resulted.

Van Buren and Keyes advise the use of mercurial treatment as soon as the diagnosis is made, and urge this as the safest plan for the patient, increasing the mercurial up to point of tolerance then dividing the dose in half, and continuing the smaller dose for a period of one year or more.

My own plan has been to give mercury when the secondary manifestations of the disease appear, and to continue it after the eruption has disappeared for a period of six months, then the so-called mixed treatment for six months, and follow this by a six or twelve months' course of iodides alone. But the longer I live and the more I see of syphilis, the more I am inclined to give iodides, giving mercury when the iodides fail to relieve the case. In all the later manifestations of the disease I use only the iodides.

So we have here syphilographers divided into two groups: one favoring and urging the administration of mercury as soon as a diagnosis is made, and continuing the use of that remedy for long periods of time; the other giving it only when the manifestations of the disease do not yield to the iodides—and then giving it only until the disappearance of the eruptions. The one group laying many of the grave lesions of the later period of syphilis to the fact that mercury was improperly given, both as to time and quantity—the other claiming that these appearances of the disease were due to the fact that not enough mercury was given, or that it was not given in sufficient quantity or not protracted over a sufficiently long period of time.

My own opinion is that they are supplementary one to the other. As I have said before, some of the graver lesions of syphilis seem to get worse under the administration of mercury, and yield rapidly to the iodides. Of course, all of us have seen patients who could not bear the mercurial treatment. Again, there are others in whom the mildest iodine course is followed by very grave symptoms.

In using mercury for syphilis I prefer the ungu. hyd. I have found in a very large experience that it produces its effects very promptly, and that it is less liable to disagree with the digestive apparatus than any of the salts of mercury administered internally. In ordering the mercurial I use 1 drachm of the 50 per cent. hyd. ung. rubbed into the skin every night, of course carefully

watching its effects, for on the slightest evidence of salivation it must be lowered in quantity or discontinued altogether; occasionally I find a patient who is very greatly depressed by this quantity. In that case I lessen the dose by half and continue it until the manifestations of the disease have disappeared. Of course this is an inconvenient mode of administration of the remedy, in persons whose occupations take them from home a great deal of the time, and who have not the facilities for warm baths. For this class of patients I order the protoiodide of mercury in $\frac{1}{4}$ gr. doses, and prefer the gelatine coated pills to those which are sugar coated. In giving the iodides for syphilis one thing is important to bear in mind, and that is, that the dose of 3 to 10 grs. is all a mistake. I commence its administration with 15 grs. and increase it 1 gr. a day until the manifestation which called for it has disappeared, and occasionally I have carried the dose up to 1,000 grs. a day.

Practically speaking, the point I wish to impress upon this body is, that there is no limit to the dose of the iodide save that which is indicated by its effects.

One of the most convenient modes of administering it is in the form of saturated solution: here 1 minim represents 1 gr. of the salt. Of course this should be largely diluted with water before it is given. For the grave forms of nervous syphilis I never give the smaller dose, but at once commence its administration in 50 gr. doses, and have had no reason to regret such a course. The same plan is pursued when a gummy deposit exists in the pharynx and nasal or post-nasal cavity. In both these classes of cases we desire to produce a rapid absorption of the gummy deposit, and so prevent its breaking down, thus protecting the patient from the horrors of such softening.

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Van Buren and Keyes.
M. Zeissl.
Hill and Cooper.
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MEDICAL PROGRESS.

GENERAL SHRINKING OF THE AORTA A CAUSE OF HEART DISEASE.—Under the above title DR. A. SCHABERT (*St. Petersburger Med. Wochenschr.*) describes a case and gives an extensive *résumé* of the literature of the subject. He refers to the old case reported by Joh. Fr. Meckel in 1750. The patient, a girl 18 years of age, had complained from early life of palpitation, with anxiety and severe pain—like angina pectoris. *Section cadaveris* showed an enormously enlarged heart that nearly filled the left half of the thorax, a

very small aorta with a diameter less than one-half that of the pulmonary artery. This interesting specimen is still to be seen in the museum in Halle. In 1765 Morgagni described several similar cases, also Andral (1836), Bouilland (1837), and King (1840).

Insufficiency of the aorta generally presents the clinical picture of dilatation of the heart, that cannot be referred to other causes; it affects young persons and causes death with symptoms of asphyxia. A later condition is that of hypertrophy, and when this has reached a degree that will overcome the increased resistance presented by the aorta, then the patient may be comfortable for a time. A third group of these cases belong to those in which the mitral valve is involved as a secondary condition. From a diagnostic point of view the case of Riegel is exceedingly interesting. The patient, a man 29 years of age, complained for years of palpitation, which later ceased. He was always employed at severe manual labor, had never had rheumatism. Later dyspnoea increased and dropsy presented itself. Presented on examination the following conditions: Medium sized man, well-nourished, with marked dyspnoea (36 to 40 per minute). Dilatation of the heart, to the left of the nipple, and to the right past the sternal border. Dulness in the second intercostal space, in which a systolic murmur could be heard, that is loudest just over the pulmonary valves, and is conducted along the vertebræ. Small and hard pulse, the right constantly smaller than the left. Liver enlarged. Oedema of the lower extremities. Urine high-colored, but free from albumen. Left recurrent laryngeal nerve paralyzed, left vocal cord in "cadaver position." Lung infarct.

The dulness, and systolic murmur in the second intercostal space, enlargement of the heart, recurrent paralysis, and difference in the radial pulse, led to the diagnosis of aneurism of the aorta. The post-mortem examination revealed a very different condition. The aorta was found to be greatly contracted, and the physical signs were due to the following conditions: The dulness was not caused by the aorta, but by dilatation of the right auricle. The systolic murmur was caused by pressure of the pulmonary artery upon the aorta. Recurrent paralysis was caused by pressure of the enlarged pulmonary artery upon the nerve. Unevenness of the pulse was simply an accidental condition.

The author's patient presented nearly similar symptoms. Six days before coming to the hospital complained of severe pain in the left breast, anxiety, hurried breathing, increased area of heart dulness that extended as high as the second intercostal space to the right border of the sternum. A few days' residence in the hospital improved the patient so much that he insisted upon returning to his home. About three months later he

presented himself with an increased area of heart dulness, and an apex systolic murmur. The liver was enlarged, extending two and one-half finger widths below the umbilicus, the pulse became irregular, and after about one month the patient died and was sent to the autopsy room with a diagnosis of pericarditis and mitral insufficiency. Post-mortem examination revealed an enlarged heart and a very small aorta, the latter presenting just above the valves a circumference of only 4.3 ctm. Considerable serum was found in the pleural, peritoneal and pericardial sacs. "Nutmeg" liver and congested spleen.

The writer attributes the fatal issue in this case to the advent of the pericarditis, that seriously impaired the nutrition of the heart muscle.

DIAGNOSIS OF ABSCESS OF THE LIVER.—PROF. P. K. PEL, of Amsterdam (*Berlin. Klin. Wochenschr.*) closes a brief article on the above subject with the following sentences: The objective symptoms of this condition are chronic hectic fever; enlargement of the affected organ is a constant sign, which is generally characteristic in that the right lobe enlarges upward. The line of liver dulness is dislocated upward, and instead of being horizontal is curved, with the convexity upward. The line of dulness does not change, as in normal conditions, by deep inspiration, or by lying upon the left side.

Subjective symptoms are pain in the hepatic region, which radiates backward, psychical depression, anorexia and sleeplessness.

Etiological considerations have an important bearing upon diagnosis, such as, tropical dysentery, residence in the tropics, gall-stones, inflammations in the territory of the portal veins, abdominal typhus, echinococcus, trauma, etc. It is, however, to be remembered that in many extra-tropical cases the etiology is very obscure.

The author closes with the statement that there are abscesses of small size centrally located, that do not present a distinct clinical picture, and in which an absolute diagnosis is impossible.

TREATMENT OF FACIAL ERYSIPELAS.—By DR. LEHNRECHER (*Munch. Med. Wochenschrift*, September 16, 1890).—Our ideas about erysipelas have been altered by recent bacteriological study and the discovery of the streptococcus erysipellatis. Formerly surgical erysipelas was separated from the spontaneous exanthematous erysipelas. In 1889 Trousseau definitely stated that both forms had a local starting-point; and previously, in 1849, Zuccarini showed, as Gerhardt had pointed out, that in fatal cases of typhoid, complicated by exanthematous erysipelas, purulent collections and degradation products were present in the cavities about the face, and that the so-called exanthematous erysipelas was due to decomposition products resulting from suppuration

and ulcers being taken up into the tissues and lymph vessels.

Out of eighty cases occurring in three years, seventy-four had facial erysipelas and forty-seven of these had some chronic inflammation about the nasal mucous membranes, or cracks, crusts, and ulcers there. Zulzer, in a recent monograph, in which treatment is exhaustively stated, does not lay any special stress on the treatment of the nose.

It is well known how numerous are the local remedies which are supposed to limit the disease, yet it is admitted that none of them attain their object. Neumann and Gerber paid more attention to the starting point of erysipelas, and Kaposi most of all. He says the nasal cavities must be inspected, pustules opened, and crusts removed, by tampons of oil.

It appears to the author of every importance that in cases of erysipelas starting from the nose gentle irrigation should be used with a 3 per cent. solution of boracic acid. It is astonishing what masses, etc., may be removed in this way. Collection of pus, etc., in the nose are easily explained, when one remembers the large space there is, filled with crevices, and also the cavities which communicate with the nose. These are often affected with catarrh extending over long periods. The air drawn into them dries the secretion and sets up decomposition in virtue of the microbes with which it is laden.

When the nasal cavities have been cleaned by the irrigation, tampons of boracic ointment made up with vaseline may be applied. With the removal of the exciting cause, the local treatment of erysipelas may be limited to the covering up of the inflamed surface with wool or oil compresses.

TROPHIC DISTURBANCES.—M. MORVAN always contested the view that the malady which bears his name was identical with syringomyelia, but abundant clinical observations have demonstrated that the two conditions are closely allied. He based the distinction upon a study of the sensibility; in the *maladie de morvan*, tactile sensibility is affected at the same time as that of pain and temperature. The authors who admit with Roth the identity of Morvan's disease and syringomyelia, maintain that in the former sensory troubles are usually not marked or absent, while in syringomyelia they are never absent. Thus far the clinical observations nor the post-mortem examination of Gombault and Reboul have not settled the question of the medullary changes in these diseases, therefore the following observation of Joffroy and Achard (*Arch. de Med. Exper. Annales de Der. et de Syphil.*) fill an important lacuna in the pathology of these affections.

A woman seventy-five years of age, had before the age of thirty an affection of all the fingers with the exception of the right thumb and the

little finger of the left hand, that persisted for two months, but disappeared after the elimination of some osseous fragments, leaving the characteristic deformity. The integument was not thickened. Tactile and temperature sense diminished on both palmar and dorsal surfaces, as well as on the lower two-thirds of the forearm. Muscular atrophy pronounced, but no signs of kyphosis or scoliosis. Autopsy revealed the spinal cord greatly diminished in volume, with irregular cavities, distributed through the cervical region, especially affecting the anterior and posterior grey cornua. Sclerosis of the posterior columns reaching the medulla. In the dorsal region round nodular masses of neuroglia centrally situated, displacing the central canal. Diffuse sclerosis in the white substance. Some changes were noted in the peripheral nerves of the upper extremities, and at some points atrophy of the fibres with Wallerian degeneration.

In the above case we find associated the peculiar symptom complex of Morvan with the anatomical changes peculiar to syringomyelia. It is, however, to be remembered that the symptoms of central nerve lesions are determined more by their location than by the peculiar pathological changes in the tissues.

THIOL IN SKIN DISEASES.—In April of the current year PROF. SCHWIMMER (*Therap. Mon. Hefte*) published his results in treating skin affections with the patented thiol. The drug was used in watery solution, one part to three, or in the form of salve, one part to ten. The writer especially recommended the drug in dermatitis herpetiformis, less warmly in acne vulgaris and acne rosacea, as well as eczema. Thiol in general has a similar action to that of ichthyol, and its therapeutic indications are much the same. It presents some advantage over the former in that the skin and linen are not stained so freely.

Schwimmer, in a recent number of the *Wien. Med. Wochenschr.*, affirms his earlier experience with the drug, and claims that it is especially indicated in those cases where a drying and astringent effect is desired.

TREATMENT OF DIABETES.—At the Congress of Berlin DR. DUJARDIN-BEAUMETZ read a paper on the treatment of diabetes which presents some points not altogether new, but which are apt to escape notice unless recalled to our attention: Prognosis in the disease can only be founded, he considers, on the results of rigid dieting; that is, it is not the relative weight of the sugar excreted in twenty-four hours which makes a case the graver or the more hopeful, but the less or greater diminution which the prescribed regimen can effect. As for the question of its curability, that can only be answered with the utmost reserve. There are cases wherein the sugar has absolutely

disappeared under its total exclusion from the food of the patient, but in which the tendency to excrete it is as great as ever.

It is interesting to see what enormous quantities of sugar can be given to healthy people without a trace appearing in the urine; and, on the other hand, to know that we cannot increase the amount excreted by a diabetic beyond the point naturally reached under an unrestricted diet. The exclusion of sugar and saccharogens from the food, all the world knows, is the main point in treatment, but the difficulty is to do it and yet not render existence too intolerable to the patient; and bread seems to be, in an inverted sense, *la pièce de résistance*, the *crux* in diabetic bromatologia. There are various more or less unsatisfactory substitutes, gluten bread and gluten bread, some with so much starch in it that the gluten is a vanishing point. There are almond-meal cakes, proposed by Seegen (or Pavy?) and sorgum bread, but the former is so nice that one soon gets tired of it, and the latter is so disagreeable that few care to commence with it. Then, there is *fromentina* and *legumina*, made from the embryos of wheat and beans—they say—there is little starch, much albumen therein.

But all have the same defect; like bran itself, which is sometimes used, they are but chaff and druff, at a monstrous price and the minimum of satisfaction if really what they profess to be, and just as starchy as bread itself, we may be quite sure, if diabetics like them. Dr. Dujardin-Beaumont was the first to suggest, "then give starch, but as little as possible." Let the daily allowance be a single potato weighing about a quarter of a pound, well boiled, and eaten with plenty of butter. Else order the crust of bread: there is somewhat more starch in it than in an equal weight of the crust, but then, one cannot eat so much of it, and the bad and tender teeth of diabetics make even that little go a very long way.

Again, they must not be allowed to eat any fruit; its glucose is the very form of sugar we wish to avoid. Then their beverages: for they are necessarily thirsty souls. Unless there be coexistent albuminuria—when we must choose the least of two evils—give no milk, it always augments the sugar. Of alcohol they can take extraordinary quantities without getting tipsy, because so much of it is at once swept out by the kidneys, but not without damage to those important organs. Therefore, proscribe spirits, liqueurs and strong wines altogether, and only permit weak wine-and-water. Light beer may be given, no stout nor porter, and extract of malt is, of course, forbidden.

Tea, coffee, cocoa, maté and kola are not only valuable as affording unobjectionable beverages, but they give the nerve stimulus diabetics so often need; and since the discovery of saccharine they can be made safely palatable, also, without

the use of glycerine, which often did harm by irritating the bowels. Another point is gymnastics. When the disease was looked upon as an exaggeration of the functions of organic life, complete repose seemed called for; but this is surely a mistake, and, short of fatigue, the patient should have abundant exercise. Nor should hydropathy be neglected; it is often of the greatest value, and holds a place between dieting and medication. As for the action of alkaline mineral waters, it is probably not so much upon the liver as in the general nutrition of the body that they are beneficially exhibited; and when combined with arsenic, as Martineau suggested, and with the addition of lithia, we have probably the best treatment yet known to us. Direct the patient to take before each meal—

Carbonate of lithia, 5 grs.
Fowler's solution, 2 drops.

in a glass of effervescing alkaline water.

But pharmacy has recently done more than this for us: the discovery of bodies which act electively upon the axis of the spinal cord, as quinine and bromide of potassium do, are of great value in diabetes, but above all antipyrin, which affects the thermogenic centres. The author has shown that this latter remedy diminishes both the polyuria and the percentage of sugar. In *diabetes insipidus* it acts extremely well, only one must take care not to confound the excessive passage of watery urine, due to renal insufficiency, with this disease. And in interstitial nephritis antipyrin only does harm. In suitable cases the dose is $\frac{1}{2}$ to 1 drachm a day. And we must not keep up the rigor of the treatment too long; human nature is weak, and monotony itself weakens the constitution; after a time give a larger potato, a slice of bread, a lump of sugar as a relaxation.—*Provincial Med. Journal*.

STARVATION AND LIABILITY TO INFECTIOUS DISEASE.—CANALIS and MORPURGO (*Oesterr.-ungar. Centralbl. f. d. Med. Wissenschaften*, No. 27, October, 1890) have recently made observations on this subject. Their experiments were made with the anthrax bacillus, the animals chosen being those most resistant to this disease, namely, pigeons, hens, and rats. Most observers have regarded pigeons as very sensitive to the anthrax poison. Canalis and Morpurgo find, on the contrary, that they show great resistance, for, out of 12 pigeons inoculated with anthrax only 2 died, one on the fourth and the other on the seventh day after inoculation. They sum up their results as follows: 1. Animals previously immune can be rendered sensitive to infectious disease by withholding food for a period. 2. In the case of pigeons, immunity against anthrax is completely lost if from the time of inoculation all food is withheld. 3. On the other hand, pigeons starved for six days before inoculation can be rendered

immune against anthrax if again fed subsequent to inoculation. 4. This is not the case if subsequent to inoculation they are starved for a further period of two days before they are again fed. The disease in this case, however, runs a longer course. 5. Well-nourished pigeons inoculated with anthrax virus take the disease, if even eight days later food is entirely withheld. 6. This would seem to indicate that the anthrax bacillus is capable of maintaining its vitality for at least several days after subcutaneous injection, and then producing this disease. 7. This increased sensitiveness towards anthrax, as the result of starvation, cannot be ascribed to the fall in the temperature which ensues, since a similar fall of temperature artificially produced in well-nourished pigeons does not deprive them of the immunity they previously possessed. 8. Hens also can, to a certain extent, be rendered sensitive to anthrax by starvation. 9. The great majority of them succumb to the disease if previously to inoculation they have been starved from three to seven days. 10. Rats—at least, the white variety used by Canalis and Morpurgo—retained their immunity against the disease, even if starved for a long period.—*Brit. Med. Journal*.

CAMPHORATED SALOL IN MIDDLE EAR SUPPURATION.—Numerous non-irritating antiseptics have been lauded of late in the treatment of middle ear suppurations. Peroxide of hydrogen and boric acid have stood at the head. CUVILLIER (*Revue de Laryngologie*) has taken advantage of the power which camphor possesses of forming a liquid when brought in contact with certain substances belonging to the phenol group, to give us a new antiseptic, which he says is unirritating—certainly a *sine qua non* in the treatment of middle ear disease. He uses the following method: The meatus is carefully cleansed with a 5 per cent. solution of boric acid, and a small wool tampon saturated with camphorated salol is carried into the canal and an external antiseptic dressing applied. This should not be allowed to remain more than twenty-four hours.

NUMBER OF NERVE FIBRES IN THE OCULOMOTOR NERVE OF THE NEWBORN AND ADULT.—SCHILLER (*Comp. Rend. d. Sci. Medical*) has recently made some observations upon the number of nerve fibres found in a cross section of the oculo-motor nerve in a newborn cat and those of an adult. The research was undertaken with a view of ascertaining if an increase took place in the number of cellular elements as age and growth advanced. The results showed that the number of fibres remained about the same, the apparent increase in the size of the nerve trunk being due to an hypertrophy of the individual elements. In adults the nerve fibre is from three to six times the size which it has in the newborn.

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MARRIAGE AS A REMEDY.

An old man, who had been an eminent physician and teacher, remarked that no act of his life gave him more regret, than his counsel to a wealthy, dissolute inebriate to marry. The result of that marriage was nine children. One was an epileptic, one was insane, two more feeble minded, hysterical, and very irregular persons. Two drank to excess, one of whom was a petty criminal. Three other children of this family died in infancy. Of the three grandchildren not one seemed to have average vigor or mental capacity. He remarked that the misery and suffering which came from this error of counsel, would at last end in the final extinction of the family.

In another instance an equally able physician, after years of unsuccessful treatment of a feeble minded, unstable, hysterical young woman, advised marriage. Insanity, inebriety and epilepsy were pronounced family diseases in her ancestors. Her marriage with a neurotic man resulted in six children, two of them dying in infancy, one is in the reform school, a thief and alcoholic; the fourth was married to a low Italian at fifteen, and is an impulsive strange woman; the fifth became insane at fifteen and suicidal; the last and youngest, has fits or periods of unconsciousness from any strain or excitement. These are not phenomenal cases, and are not uncommon in every community. They are presented to bring out the fact, of the exceeding danger of thoughtless counsel to marry, to neurotics and persons who are markedly degenerate, and have strong hereditary taints.

In a recent lecture by DR. STRAHAN, before the Medico-psychological Association of England, "On the Propagation of Insanity and Allied Neuroses," he urges that one of the most prominent causes of the increase of insanity and nervous diseases comes from marriage. He mentions the great difficulty in ascertaining the facts, because of the tendency to conceal family history in all cases; yet notwithstanding all the falsehoods of relatives the English Lunacy Commissioners were able to trace 25 per cent. of all the insane to this cause. From 25 to 90 per cent. of all insane are said to come from heredity. These are the two extreme figures, of eminent authorities who have examined this subject. Beyond all questions of possible dispute, numerous and well sustained facts, show the hereditary transmission of disease and diseased tendencies, and the degeneration which comes from marriage of defective ancestors. Nothing can be more serious and reprehensible, than medical advice to marry, or consent to the union of defectives, the results of which there can be no question. The unstable neurotic man or woman, the inebriate, the eccentric, the evident weak and degenerate, rarely ever in any possible way become stronger by marriage. The danger of propagation of all their defects and diseases is so pronounced, and certain, that the experiment is hazardous in the extreme.

Our present knowledge of the causes of nervous disease, sustain this statement fully. There is no restriction of marriage to-day except in the pronounced idiotic and raving maniac. No one is so diseased or deformed, or crippled, or defective in mind or morals, but may marry and become a parent of degenerate, helpless children, as far as the law is concerned. While this is a sad reflection on the intelligence and civilization of to-day, it reveals a field of reform which medical men of all others should occupy at once. All medical writers are unanimous in condemning marriages between defective and disordered persons, and yet public sentiment would not sustain to-day any special laws of restriction. Obviously this is one of the great fields of prevention of disease, that both medical men and legislators will occupy in the near future.

To day all advance in this direction comes from those who breed animals for various purposes. Here a knowledge and application of a vast range of facts produce certain anticipated results, which

could be obtained with the human family with equal certainty. The duty of medical men, irrespective of all public opinion is to teach the doctrine of heredity, not of any special form of disease, but the transmission of defects, and of lowered vitality, and particular tendencies or taints, that cripple and disable the coming generation. To teach the laws of propagation, and thus prevent disease at the beginning, and cut short the terrible process of nature that hurries the victim down the road of misery and sorrow, to final extinction.

Never counsel marriage as a remedy or means of relief for neurotics or persons of defective heredity. Elevate and dignify marriage as a means to raise the race in every way from its childhood age. Although *Utopia* is far away, there are evident signs of progress towards it, and when marriage becomes a subject of strict legislation, a long stride forward will be taken.

MAKE HASTE SLOWLY.

It is not singular that when a remedy for tuberculosis is announced, the medical profession of the entire world should endeavor at once to verify its claim and pass judgment upon its merit. As soon as it was known that there was a possibility of demonstrating the truth or falsity of DR. KOCH's claim thousands of men, representing almost every prominent medical centre upon the two continents, have gone with utmost haste to Berlin, with the two-fold purpose of securing the newly discovered remedy, and of gaining the necessary instruction as to the method of its administration.

Not only so, but the victims of consumption are thronging the streets of that city by thousands, and the faith of the laity was hardly ever so committed to any medical discovery as they are to this. In the onset of this intense excitement it is needful that our medical men shall pursue a conservative course. It is not needful that they shall be skeptical, nor that they shall prejudice the facts. Nay, it is the glory of conservatism that it holds its way in its progressive course fully abreast all well attested facts, but it is also to its credit that it goes no farther. If a remedy for this dreaded scourge of the human race shall have been found, we cannot possibly be too prompt in the use of all legitimate methods for

its application. But it were a cruelty beyond expression to raise the expectation of mankind to such a pitch as this announcement has done, and then to doom it to disappointment. The character and standing, at home and abroad, of the men who have this remedy in hand, forbid for a moment the thought that they would practice upon the credulity of men for mercenary ends. They are surely honest in their convictions. But is it not possible that the untold value of such a discovery may have led to the indulgence of over-sanguine expectations and to an over-statement of practical results. The danger is that the ardent desire to give to mankind such a priceless boon, will lead to expressions more radical than can be realized. Time must be an element in the decision of this question. It is surely the part of wisdom that evidence shall precede judgment, and it is due to our suffering patients, the victims of consumption, that our promises of cure shall be only such as they may surely realize.

KOCH AND HIS CRITICS.

In general the attitude of the medical press has been fair and judicial, with a full disposition to accord to DR. KOCH, his own time and pleasure as to the manner he shall make his discoveries known. We notice now and then a spirit of carping criticism in these particulars and a disposition to belabor the eminent investigator for not immediately unbosoming himself. It would seem that any one who had devoted eight years to the solution of a problem of the utmost importance to science and humanity ought, at least, to be accorded the meagre privilege of dictating the manner of its publication. Dr. Koch has shown no disposition to profit directly by his discoveries, and it would seem that if he withholds it for a time it is probably for a good reason, and with his simple statement the profession ought for the present to be satisfied.

It is apparent on a careful reading of his original paper, that it is not a remedy that can be used indiscriminately in every case of tuberculosis. For he distinctly delimits its curative effect to the earliest stages of phthisis and to certain local affections, warning the profession that all medical and surgical means are to be used in combatting the disease. The tone of his paper is eminently fair and free from special

pleading. It is to be regretted that the great bacteriologist could not quietly pursue his investigations, and place them completed and symmetrical before the profession.

Another class, followers of the new school in pathology, who refer many diseased processes to parasitic germs; it is amusing to see how gingerly they have approached the new light and how carefully they have refrained from committing themselves. Stoutly affirming, as they have for years, that each germ and ptomaine must have its living or chemical antidote, when the demonstration was offered they drew back. When the great high priest of the microorganisms brought forth the glad tidings, they stood like doubting Thomas, afraid to believe.

THE NATURE OF KOCH'S "REMEDY."

While it is perhaps idle, we cannot refrain from speculating a little as to the nature of the substance used by Koch. When his paper was read before the Congress it was supposed that it was in the nature of a minimized virus, a kind of inoculation like that of PASTEUR. This idea came from confounding the researches of GOUCHER and MARTIN who published their papers shortly after his. A careful reading of KOCH's communication would at once dispel this, as he speaks of it as a remedy or substance, in much the same terms as one would speak of a drug. Since the second paper, some salt of gold has been thought to be the curative agent. We doubt, however, if it belongs to any of these classes, as no known chemical substance or drug will produce the stormy febrile movement, with the exception of those that are formed as a result of bacterial growth. It will be remembered that we referred editorially, some weeks ago, to a substance obtained from beer yeast that produced a quick, sharp, febrile movement, (the malaise, pains, etc., caused by Koch's injections are but post-febrile phenomena). Another substance termed "tox albumen" has been obtained by the cultivation of the Klebs-Löffler bacillus. Not only are these products raised by the nature of the bacillus but also by the soil in which they grow and other conditions. We venture the prediction that the "remedy" belongs to those substances produced by the action of bacterial growth.

EDITORIAL NOTES.

A VEGETARIAN'S RECONTANTATION.—The *Medical Record* has a note concerning a certain Dr. Alanus, formerly a leader among the vegetarians of Germany, who has felt constrained to return to a meat-diet. The occasion of this change of mind was in the fact that he found his arteries were becoming atheromatous while he was yet under 40 years of age. At first he knew not how to account for this premature degeneration, since he had at no time been a drinking man, but having one day taken up one of Ernest Monin's semiological essays showing that an abstinence from meat-diet tended to produce atheromatous changes in the blood-vessels, his eyes were opened. He therefore abandoned an exclusively vegetable dietary, at the same time lamenting that a single brutal fact could so completely upset a vast and beautiful theoretical structure.

PAINLESS GOUT.—Mr. Jonathan Hutchinson has published in a late number of his *Archives of Surgery* some of his interesting experiences in rheumatism and gout. Pain is a symptom that is not essential to gouty inflammation. When gout affects the cutaneous and cellular tissues chiefly, it may very well happen that there is little or no pain. In many cases of even acute gouty inflammation, redness and swelling may be present while pain is almost wholly wanting. In such cases the diagnosis of erysipelas might very likely be made; for as Mr. Hutchinson says he has seen, in some instances, the oedema spread up the limb, and this suggestion as to diagnosis would appear to obtain an item of important corroboration.

THE INSULAR TREATMENT OF DIPSOMANIA.—Dr. Karl Kahlbaum presented before the Berlin Medical Congress considerations to show that this question has become a subject of international importance. He spoke of the painful position of the psychiatrist who is asked to advise in cases of chronic alcoholism. In his view, many of these patients were diseased before they became inebriated, or they presently became diseased in consequence of the drink. In either case the misery resulting is the same, an overmastering desire for alcohol which cannot be subdued or avoided. The chain of symptoms of alcoholism, such as tremor, paralysis, epilepsy, partial or general mental derangement, is well enough

known, but it is not always considered sufficiently important for a lodgment of the inebriate in some medical institution, which is in reality the only fit place for him. As soon as these morbid phenomena lighten up and disappear the patient is allowed to be discharged as cured, but the strong presumption is that no sooner will he have regained his liberty than he repeats his error. If he were retained longer in hospital there might be more hope of a genuine cure, but most institutions are glad to be rid of him and the patient himself is endowed with little patience with his detention, and his own desire is to leave without much reference to the state of his cure. It is also true that the institutions for inebriates are too limited and at the same time exposed to danger. The plan which seems to offer the most hopeful results would be a general consensus to have an island set apart for these subjects of intemperance. Nothing short of a combination of medical men, with the assistance of some wealthy layman, will overcome the difficult problem where inebriate retreats must be established; this company should undertake the management of the island, under a State authority to prohibit the importation or production of every kind of alcoholic drink. An even wider scheme of organization might follow later under which the inebriate might have his family transported to the island along with him, and in this case it would become necessary to provide the means of employment and livelihood for these people, and agriculture in some of its forms would probably be the least objectionable pursuit at the outset of the undertaking. Such an organized insular colony might also be useful for some cases of morphine addiction, tabagism and other forms of irrational indulgence. Dr. Kahlbaum supports this insular *modus medendi* by the following considerations bearing upon the mechanism of the extravagant thirst for alcohol present in these cases: The presumption of those who look for a physical basis for this desire is founded on the theory that a molecular change takes place in the nervous system which disturbs the equilibrium when the alcoholic derivative is withdrawn after a long continuance of its use. When the unsteady molecular stage has been reached the alcoholic longing is intense and nothing short of total abstinence will conquer it. If the organic impressions have not been too deep or too wide, this molec-

ular condition may soon be restored to its former equipoise by the withdrawal of its cause, but where organic changes have taken place, a much longer time will be necessary for a restitution of tone. Absolute denial of alcohol is the rational mode of treatment for alcoholic habituation, but this must be continued long enough to remove the morbid changes and their consequences.

THE BACTERIAL WORLD.—This is the title of a monthly illustrated magazine for the study of microorganisms and diseases of bacterial and parasitic origin, the first number of which will appear January 1, 1891, under the editorial supervision of Paul Paquin, M.D., Director of the Bacteriological Laboratory, State University, Columbia, Mo.

One of its distinguishing features will be a series of studies in bacteriology which will enable the physician in his home to keep himself abreast of the best methods of investigation, and the successive articles upon hygienic medical and surgical bacteriology will meet an essential want of which every physician is conscious, and which he is anxious to satisfy. Each number will contain from thirty to forty pages, well illustrated, at a cost of \$3 per year. We bespeak for this new journal a liberal patronage.

THE UNIVERSITY MEDICAL MAGAZINE.—This valuable monthly medical journal proposes to add to its already well-filled columns a new and, as we anticipate, an exceedingly valuable department, devoted to Medical Progress. The Sections will be under very able supervision, as follows: That of Medicine will be conducted by Drs. William Pepper and James Tyson; Surgery will be represented by Drs. D. Hayes Agnew and J. William White; Therapeutics will be supervised by Dr. Horatio C. Wood; Gynecology will have the special services of Dr. William Goodell; and Obstetrics that of Dr. Barton Cook Hirst. The policy of the magazine will be to limit itself strictly to the publication of original matter. The editorial supervision, at present so able, and the added labor of those whose names we have enumerated, are an ample guarantee for the production of a journal of a very high order of merit, which shall more and more redound to the credit of American medical literature.

WEISS, of Vienna, says that an early symptom of locomotor ataxia, is inability of the patient to walk backwards, while in other ways the patient may walk with rapidity and certainty.

TOPICS OF THE WEEK.

PROTECTION FROM DIPHTHERIA AND TETANUS BY INOCULATION.

By the courtesy of the *Deutsche Medicinische Wochenschrift* your correspondent has received advanced proofs of an article on the prevention of diphtheria and tetanus in animals, based upon experiments in the Hygienic Institute at Berlin, made by Dr. Behring, assistant in the institute, and Dr. Katasato, of Tokio. After long experimentation these observers claim to have cured animals suffering from either of these diseases—diphtheria and tetanus—by the inoculation of the serum from the blood of animals already infected. It is claimed by a large number of experimenters, first, that the blood of rabbits protected from tetanus possesses the property of destroying the tetanus poison. Second, that this property is possessed by the non-cellular serum obtained from the blood. Third, that this property is of so constant a nature that it also remains active in the organism of other animals, so that notable therapeutic effects are produced by the transfusion of blood or serum. Fourth, the property of destroying the tetanus virus is absent in the blood of those animals which are not protected against tetanus, and if the tetanus virus is injected into non-protected animals, it can be so demonstrated, even after the death of the animals, in the blood and other fluids of the body.

In the test of the degree of immunity a rabbit previously protected received 10 cc. of a germ containing virulent tetanus bacilli culture, of which five-tenths cc. sufficed to make a normal rabbit yield inevitably to tetanus. The protected rabbit remained entirely healthy. He had not alone secured immunity against infection with living tetanus bacilli, but also against the tetanus virus, as he tolerated twenty times the amount of a poison which suffices to kill, without exception, normal rabbits.

Blood was taken from the carotid artery of this rabbit. From this fluid blood (before coagulation) two-tenths cc. were injected in the abdominal cavity of one mouse; five-tenths in that of another mouse. At the end of twenty-four hours both animals, together with two mice, were injected with virulent tetanus bacilli, and to such an extent that they were attacked by tetanus twenty hours afterward, and died in thirty-six hours. On the other hand, both previously treated mice remained perfectly healthy. The larger amount of blood was allowed to stand until serum had formed abundantly, and of this serum six mice received each an injection of two-tenths cc. into the abdominal cavity. After the infection, which occurred twenty-four hours later, all six animals remained healthy, while the unprotected mice died of tetanus in less than forty-eight hours. Therapeutic results may also be secured by the serum in the following manner: The animals are first infected by inoculation, and then the serum is injected into the abdominal cavity. Experiments with the serum were also made tending to show its great virus-destroying property. Of a ten days' tetanus culture, which had been made free of

germs by filtration, .00005 cc. sufficed to kill a mouse at the end of four to six days, and .0001 cc. to kill in less than two days.

Now, we mixed .0001 cc. of this culture and allowed the serum to act twenty-four hours upon the tetanus virus contained in the culture. Of this mixture, four mice received each 2. cc. up to .033 cc., or more than three hundred times the dose otherwise fatal to mice. Four mice remained permanently healthy, while the unprotected mice died at the end of thirty-six hours from .0001 cc. of the culture. The mice, in all the hitherto-mentioned series of experiments, both those into whose abdominal cavity serum was injected, and those who were injected with a mixture of tetanus virus and serum, have remained permanently protected. They resisted subsequently repeated inoculations with virulent tetanus bacilli. This fact is especially noteworthy because in the innumerable individual experiments no mouse, no rabbit, in fact, no animal hitherto tested, had been found protected, and because the very long continued attempts in the Hygienic Institute to make animals safe against tetanus by the hitherto known methods, have been entirely unsuccessful. The authors claim that they are justified in drawing the conclusion that the above expressed interpretation of the occurrence of immunity which at once, and without any difficulty shows a positively effective, and for the animals, entirely innocuous method of producing immunity, also satisfied the need of preventing its causation. As a matter of course, experiments were also made with the blood and serum of non-immune rabbits. This blood and serum proved therapeutically, as well as prophylactically, to have no influence upon the tetanus virus. This was also true of cow, calf, horse, and sheep serum, as was shown by special experiments. The blood within the vessels of living non-protected animals also possesses no tetanus destroying properties, as appeared from the following experiment, which was repeatedly made:

Animals who received a subcutaneous injection of .5 cc. of a virulent tetanus culture, free from germs, died after five to six days with typical symptoms of tetanus. At the autopsy, in almost every case, a serious transudation is found in the pleural cavity. Of this transudation .3 cc. on the average, suffices to produce tetanus in a mouse, and to kill the animal, and in the same dose the blood of a tetanus-poisoned animal again produces tetanus in mice. In conclusion, the authors express a hope that the principles demonstrated in these experiments may in time be applied to the treatment of diphtheria and tetanus in man.—Berlin Correspondent, *Medical Record*.

THE INFLUENCE OF ELECTRICITY UPON THE LOWER FORMS OF LIFE.

Slight electric shocks from a coil (induced current), increase the rapidity of the protoplasmic movements; stronger ones cause tetanic contraction, and numerous and powerful ones produce coagulation. "A constant current causes contraction and imperfect tetanus; and if powerful and long kept up, the positive pole produces in the *Amœbæ* near it the same changes as dilute hydrochloric

acid, and the negative pole the same changes as are produced by an alkali such as potash." Upon Infusoria, weak electric currents first quicken the ciliary motion and cause movement of rotation, then swelling of the protoplasm, slower movements and finally apparent solution of the protoplasm. Moderate currents produce a tetanic contraction of the protoplasm and of the cilia, while the contractile vesicle is unaffected. Strong currents cause liquefaction of the protoplasm.—Geo. E. Fell, M.D., *The Microscope*.

THE COAGULATION OF THE BLOOD.

MM. Arthus and Pagès (Brown-Séquard's *Arch. de Phys.*, October,) have propounded a new theory of the coagulation of the blood. Starting with the idea that the curdling of milk presents analogies with blood coagulation, these authors, after applying the same methods of investigation to the two processes, have arrived at the following conclusions: 1. Oxalates, fluorides, and alkaline soaps render blood non-spontaneously coagulable, even when added in very minute proportions. 2. It is upon fibrin formation, and not ferment production, that the action of these bodies is exerted. 3. These bodies produce this effect by removing soluble calcium salts from the blood. The addition of a trace of a soluble calcium salt renders blood once more coagulable after it has been rendered non-coagulable by the addition of soluble fluorides, oxalates or soaps. The rôle of calcium can be played by strontium, but not barium or magnesium. 4. The ash of the most carefully washed fibrin contains calcium salts, and the amount of clot obtained is proportional to the amount of calcium when a minute amount only is present; hence the molecule of fibrin contains calcium. This may be replaced by strontium. 5. The ferment is unable to act upon fibrinogen, except in the presence of a soluble calcium salt. 6. The rival theories of Al. Schmidt and Hammarsten are reconciled by adopting the view that fibrinogen undergoes in the presence of the ferment and of soluble calcium salts a transformation into an insoluble calcium compound—fibrin. Schmidt's fibrinogen contained no calcium, while his fibrinoplastin did; Hammarsten had no need of fibrinoplastin, for his fibrinogen contained the necessary lime. 7. The curdling of milk is due to a transformation of casein under the influence of a ferment, giving rise to the formation of an insoluble calcium compound. The clotting of blood is an analogous process. Green, of Cambridge, showed a few years ago that the presence of a minute quantity of calcium was essential for the production of a clot, but MM. Arthus and Pagès have much extended his observations.—*Brit. Med. Journal*.

CHOLERA THREATENED.

According to the secular exchanges, the Eastern countries have become the subject of cholera ravages. Abyssinia has suffered a loss of more than 10,000, Spain is infected, and India has been reached. More than 80,000 have perished in Japan, Korea and the contiguous Asiatic provinces of Russia. All this loss within a few months.

"The danger of the present epidemic," says one account, "is greatly increased by the yearly pilgrimage of

Moslems to Mecca. The great body of these ignorant Mussulmans who congregate in Mecca are filthy in their habits, and by consequence readily contract the disease, and thus spread the infection in Syria, Turkey, South-eastern Austria and the provinces of Northern Africa. The present plague exists to some degree in most of these countries, but it will soon be augmented by these Mecca pestilence breeders."

The course of the plague is like to that followed in the past, namely: the route from Bekor to Alexandria and through the Levant. We are nevertheless consoled by the assurance that quarantine enactments are more comprehensive, prophylaxis more complete, and therapeutic measures are to be perhaps more trustworthy. At all events, a very encouraging feature is that there seems to be less alarm on the part of the public than ever was known before. The popular idea is that the predicted spring visitation is a mere probability, likely to be behind time.

AN ANECDOTE OF SIR ASTLEY COOPER.

Before Astley Cooper was 40, he had a practice in value rising \$75,000 a year; indeed, his books show one year's fees collected, \$105,000. In 1820, at the height of his success, he was called in to remove a steatomatous tumor from George IV's scalp. On the day appointed, he waited upon his Majesty. Lord Liverpool and other cabinet officers occupied a room adjoining that in which the King was. In preparing for the operation, Cooper was observed to be pale and nervous, when Lord Liverpool, taking hold of his hand, said: "You ought to recollect that this operation either makes or ruins you. Courage, Cooper." This timely rebuke so impressed him that every trace of anxiety vanished, and he performed the operation with his wonted dexterity. This won his baronetcy with remainder to his nephew, who succeeded to the title.

NO MAN LIVETH TO HIMSELF.

Among the animals to which man gives his involuntary assistance, we may mention first, four different Cestodea, or tape worms, which live in the intestines; three or four Distomes, which lodge in the liver, the intestines or the blood; nine or ten Nematodes, which inhabit the digestive passage or the flesh. There are also some young Cestodes, named *Cysticerci*, *Echinococci*, *Hydatids*, or *Acephalocysts*, which find in him a *crèche* to shelter them during their life. These always choose enclosed organs, like the eye-ball, the lobes of the brain, the heart or the connective tissue. We also provide a living for three or four kinds of lice, for a bug, for a flea, and two ascarides, without mentioning certain inferior organisms which lurk in the tartar of the teeth, or in the secretions of the mucous membranes.—(*Van Beneden*.)

And after these come *the microbes*!

A LEGAL DEFINITION OF TOTAL HELPLESSNESS.

A bill has been introduced into the United States Senate defining "total helplessness" as applying to all persons who lost a leg or an arm at or so near the joint that an artificial limb cannot be used, and granting all such persons a pension of \$72 per month.

PRACTICAL NOTES.

TURPENTINE IN TYPHOID FEVER.

Dr. H. C. Wood advises a return of the turpentine treatment of typhoid fever as practiced by Dr. G. B. Wood. He begins its use about the twelfth or fifteenth day, thinks it lessens the tendency to hæmorrhage, and ameliorates other symptoms due to the local lesions.

His formula is :

- R. Oil of cloves, gtt. vj.
Oil of turpentine, f 3 jss.
Glycerine.
Mucil. of acacia, aa f 3 ss.
Syrup.
Water, aa q. s. ad f 3 iij. ℞.

Sig. Dessertspoonful every three hours during the day.—*Medical News*.

FOR ACUTE ECZEMA AND IRRITABLE CONDITIONS OF THE SKIN.

- R. Cocainæ hydrochlorat., gr. iij.
Atropinæ sulphat., gr. j.
Morphinæ sulphat., gr. ij.
Ung. acidi carbolici, 3j. ℞.
—Shoemaker, *Times and Register*.

IRRITABLE BLADDER.

Dr. E. L. Tunstall recommends the following mixture in cases of irritable bladder :

- R. Potassium citrate, 4 drachms.
Fluid ext. triticum repens } of each 1 oz.
Tincture of hyoscyamns }
Fluid ext. of buchu, ½ ounce.
Water sufficient to make 3 ounces.

One teaspoonful in a wineglassful of water three or four times daily.—*Medical Summary*.

CHLOROFORM LINIMENT.

- R. Chloroform, 4 ounces.
Camphor, 1 ounce.
Fluid vaseline, sufficient to make 8 ounces.

Dissolve the camphor in the chloroform and then add the fluid vaseline. Of course, the amount of vaseline may be varied according to the strength of the liniment desired. It is said that this makes a much more useful application than chloroform liniment made with olive oil.—*Medical News*.

SALOL IN MALARIAL DIARRHŒA.

Dr. Moncorvo, of Rio Janeiro, strongly recommends salol in the treatment of diarrhœa, complicating malaria, in childhood. His paper, which is published in the *Revue Mensuelle des Maladies de l'Enfance* for October, contains a series of cases of various ages. He states that the diarrhœa rapidly decreases, and soon ceases altogether, and the stools are no longer offensive; flatulence and colic, due to abnormal intestinal fermentation, cease to be troublesome. His gen-

eral conclusion is that salol is a valuable agent for producing "intestinal antiseptics in children with enteritis or entero-colitis of malarial origin." He administered the remedy suspended in mucilage, and found it well taken, even by very young children. No poisonous symptoms were ever observed to follow its use. The dose given to an infant in the first few months of life was 15 to 20 centigrams (about 2 to 3 grains); for a child under 2 years, 25 to 50 centigrams (about 4 to 7½ grains); above 2 years, from 1 to 2 grams (15 to 30 grains).—*British Medical Journal*.

TINCTURE OF SUNFLOWER IN MALARIAL FEVERS.

Zubovitch has described in *Vratch* his use of sunflower in a variety of malarial affections. He has used the drug in the form of a tincture of either the fresh bark of young stems or of the fresh flowers. Of this he would give to an adult a wineglassful three times a day, the administration to be continued for two or three days after the paroxysms have been broken up. His experience leads him to state that, 1, the sunflower treatment is competent to the permanent and complete cure of malarial fever in from three to ten days; 2, it has overcome cases that have not yielded to quinine; 3, its range of application is limited to no type of malarial poisoning, all the various types in which he has tried it being alike equally amenable to it; 4, no unpleasant symptoms have been manifested as due to the drug except an occasional profuse night-sweat; and 5, the tincture of the flowers seems to act more rapidly than that of the bark.

THE RAW THROAT OF DYSPEPSIA.

Cases of symptomatic cough without physical signs present themselves to every chest clinic. The patient generally reports, also, some pain in the sternal region and under the left scapula; constipation frequently a concomitant. Such cases are dyspeptic in origin, and the cough is popularly known as "stomach-cough;" pyrosis may be present with or without regurgitation and a bitter taste in the mouth, and other signs associated with dyspepsia. If the throat is very raw or sore and the soft palate relaxed the following gargle may be ordered :

- Sulphate of zinc, .
Carbolic acid, of each, 4 grains.
Glycerine, 4 drachms.
Water, 3½ ounces. ℞.

Use as gargle three or four times daily. This is a favorite at the University of Maryland clinic, and is known as "McSherry's gargle" from its originator, Dr. H. Clinton McSherry, of Baltimore. Internal treatment by means of tonic or antacid remedies will also be required in many cases.

SOCIETY PROCEEDINGS.

Medical and Chirurgical State Faculty of Maryland.

Semi-annual Meeting held at Cambridge, Md., November 17th and 18th, 1890.

THE PRESIDENT, DR. T. A. ASHBY, IN THE CHAIR.

DR. A. H. BAYLEY, of Cambridge delivered the address of welcome.

DR. T. A. ASHBY delivered

THE PRESIDENT'S ADDRESS.

After hastily reviewing the early history of the Faculty, its power, its control of the medical profession in this State and its high authority, he spoke of the causes which led to shrinkage of its membership and its loss of authority over the profession. The meetings had always been held in Baltimore. This made it a local society. These semi-annual meetings were started to interest the county members, the fees were reduced and a large accession of members was the result. The Medical Practice Act was vetoed by the Governor, who was influenced by unprincipled politicians. This was a direct insult to the respectable members of the medical profession of Maryland. Physicians have no lien on an estate, no preference in court.

The profession of this State should organize in order to achieve success. This can only be done by this Faculty. To this end local societies should be encouraged in all the counties of the State. Since last year over one hundred members have been added to the society and the prospects were most encouraging.

Dr. R. Winslow then read a paper entitled

SIMULTANEOUS DISTAL LIGATION OF THE RIGHT COMMON CAROTID AND RIGHT SUBCLAVIAN ARTERY FOR SUPPOSED INNOMINATE ANEURISM. RECOVERY FROM THE OPERATION.

A dissipated woman had five miscarriages. There was pulsation at the root of the right side of the neck at the sterno-clavicular articulation. She was put on low diet and given iodide of potash, ten grains. Effect not being good, an operation was performed and the subclavian and innominate arteries were ligated at their distal ends. She was kept quiet for some time and now seems to be well. In such cases if the aneurism shows no tendency to break or cause great inconvenience, try postural treatment and the iodides and postpone operation. He then gave some statistics of similar operations, and the number of aneurisms in age and sex. His operation is not dangerous when done antiseptically and with an absorbable ligature.

DR. R. W. JOHNSON thought in 1871 very few antiseptic operations were performed, and even now surgeons do not always operate antiseptically. It is not a point of election whether you do a distal or a proximal ligation. The strong pulsations of the heart are apt to break through the weakened arterial walls. He also thought that the absorbable ligature was by far the best.

DR. WINSLOW said that most men mentioned were those who operated since antiseptics were introduced, and it was fair to presume that they used it.

DR. S. T. EARLE then read a paper on the
USE OF ELECTROLYSIS IN STRICTURE OF THE RECTUM.

The definition of electrolysis should be exact. A good battery and a reliable milliampèremeter are both indispensable. A Leclanché battery of 30 to 50 cells is sufficient. A salt solution on the skin increases the electrolytic action. He related several cases in which he used electrodes gradually increasing in size, and in suspicion of syphilis giving the iodide of potash.

DR. WINSLOW asked if these cases had been under observation long. The cure can not be maintained too soon after the operation.

DR. W. S. GARDNER referred to one case noted in which an electrode no larger than a match could be introduced, while after a short time Dr. Earle claims to introduce an electrode one inch in diameter. Was this electrolytic action or simply dilatation?

DR. EARLE said that one case operated on two years ago was practically well now. As for the electrode, he said that often an electrode could not be introduced at first, and after the current was turned on it went in easily.

DR. W. P. CHUNN referred to one of the cases mentioned in which Dr. Earle said there was a neoplasm in Douglas' cul-de-sac. This disappeared after treatment. Did he think it was a growth removed by the electricity?

DR. PRESTON said he had not used electricity in this connection, but only in facial blemishes, etc. He thought the idea was only to decompose the tissue by a weak current, and not to cauterize it by a strong current, as Dr. Earle seemed to do. Some currents are too high.

DR. EARLE said in reply to Dr. Chunn that it was not a myoma, but simply an infiltration of tissue around the rectal walls. In reply to Dr. Preston he said his experience with both weak and strong currents in these cases was that the strong current was decidedly better. These currents do not produce cauterization.

DR. S. K. MERRICK then read a paper on
SOME OBSERVATIONS ON FIBROMA OF THE NOSE AND NASO-PHARYNX WITH A REPORT OF THREE CASES.

After defining fibroma and observing that the

cause was not evident in that the negro who was subject to uterine fibroids never had nasal fibroma, he drew up a general sketch of the diagnosis and treatment and then related at length these three cases.

DR. JOHN N. MACKENZIE then read a paper entitled

POST-NASAL OBSTRUCTION IN CHILDREN.

This is a subject of the utmost importance. It is wonderful that only in the past fifteen years it has been studied. Meyer, of Copenhagen, was the first to introduce it in 1875. He called it adenoid growth of the naso-pharynx. The adenoma of the vault of the pharynx is the most common cause. It is generally post-nasal. Obstruction of the nares is incompatible with viability of the foetus. It is most common in children from the fourth to fifth month. Pliny spoke of it. It grows from the vault of the pharynx as a mass of adenoid tissue, called by the Germans the tissue of Luschka, although discovered by Schneider. It begins by a proliferation, then small tumors appear which may hang down in the pharynx like stalactites or bunches of grapes. The papillomatous form of pharyngeal growth is more frequently met with in this part of the country, while patients from the West and Lake regions present the greatest varieties of growth. In Boston the stalactite variety preponderates. In England he found this very common. The diagnosis is sufficiently easy. It may be confused with a fibroma of the vault of the pharynx, but the treatment is the same. Those who do not make the diagnosis with the rhinoscopic mirror may use the finger. It is like touching an earthworm, and if blood is on the finger when withdrawn, these two facts will confirm the diagnosis. He uses the forceps which bear his name. When a child is brought to him with nasal obstruction or with symptoms of non-suppurative otitis media, he introduces those forceps without making a diagnosis, and rarely fails to bring away the growth. These growths have a great effect on the child, who breathes through his nose; his nose becomes flattened and he has a frog face. This facial expression is characteristic. Meyer, of Copenhagen, uses a "ringmesser" or guillotine knife introduced through the nose. The best methods seem to be the forceps. As a rule, he does not use anaesthetics. Occasionally the hæmorrhage is very severe.

DR. B. W. GOLDSBOROUGH, in referring to Dr. Merrick's paper, said he had seen one of the patients and he was entirely well.

DR. WILMER BRINTON asked what was the smallest child operated on by Dr. Mackenzie?

DR. MACKENZIE said he did it to those in arms, three or four months. In referring to Dr. Merrick's paper he said the instrument was apt to break, as it had done once in his case. He said

he did the operation every day, and at the Johns Hopkins Hospital in one month he did it 170 times.

DR. S. K. MERRICK said he used Mackenzie's forceps. In the cases where he could not reach with the forceps he used his finger with success.

DR. WILMER BRINTON read a paper on

PROLAPSE OF THE FUNIS,

in which he related four cases which occurred in a thousand of his.

DR. W. P. CHUNN asked what the hæmorrhage was from in Dr. Brinton's cases.

DR. B. W. GOLDSBOROUGH said he had a case of this kind. He tried to stop the hæmorrhage in vain. Everything failed until he applied turpentine to the fundus of the uterus and all bleeding stopped.

DR. BRINTON said many people had never seen a case like the one he related. He had seen four, and in one he applied the forceps and the hæmorrhage came from the cervix. He kept tampons in for several hours, and gave ergot. He feels sure that the blood did not come from the interior of the uterus. It should be decided what course shall be followed the very minute the funis presents.

DR. W. S. GARDNER said such cases were very difficult to treat, and needed prompt attention.

DR. J. C. CLARK, of Federalsburgh, presented a case of

PROFOUND ANÆMIA.

He brought the case for diagnosis. The patient had been an invalid for eight years and had been under his treatment for the past year without much sign of improvement. The history is very imperfect. His countenance is poor, sight very bad, he complains of muscular weakness and sick stomach, nausea, and occasional vomiting; has a poor appetite, and feels languid. There has been no improvement for eight years—no better, no worse. He is pale. The urine contained no albumen.

DR. WM. OSLER examined this case, and suggested that it was profound anæmia due to trouble in the large intestine. Such cases often have these retinal changes noted in this case, with gastro-intestinal changes. The patient was not much emaciated. In these cases iron is not good, but some form of arsenic is better. Cases of pernicious anæmia often fail to improve under iron and recover under full doses of arsenic.

DR. W. S. GARDNER then read a paper on

THE RELATION OF ALBUMINURIA TO PUERPERAL ECLAMPSIA,

in which he gave the results of a large number of cases at the Maryland Maternité. Heat and nitric acid were used. His conclusions were:

1. The presence of albumen in the urine of a pregnant woman is not sufficient cause upon

which to base a prognosis of probable eclampsia.

2. The failure to find albumen in the urine of a pregnant woman is no evidence of the absence, or at least of the continuance of the absence of the condition that gives rise to puerperal convulsions.

3. Albumen is so frequently found in considerable quantity in the urine of patients, immediately after the appearance of puerperal convulsions, that we are justified in making the statement, that the convulsions are the probable cause of the albuminuria.

DR. BRINTON was much pleased with this paper. He thought if we could collect a large number of cases, much more than presented in this paper, we should be warranted in drawing conclusions as he has done. We cannot always look to the kidney lesion as the cause of death.

DR. G. J. PRESTON thought that some conditions of the central nervous system might cause the trouble.

DR. OSLER said, that in Montreal he had made the autopsies for ten years, and that in not a single instance were the kidneys in such cases found normal, except in one case, which showed an immense cranial hæmorrhage—the clot extending from the third to the fourth ventricle of the brain.

DR. GARDNER thought this experience rather exceptional.

DR. PRESTON asked if the woman was systematically examined in each instance?

DR. GARDNER said that the urine was examined, in a routine manner, in each case, and was done with average care. The object of these urinary examinations was to see if this prognosis of eclampsia could be made before pregnancy.

DR. R. W. JOHNSON then read a paper entitled, *The Surgical Treatment of Non-pyæmic Abscess of the Liver, with Report of a Case*, in which he principally advocated aspiration, even in the smallest abscesses, as opposed to incision. The aspirator should be used in diagnosis.

DR. R. WINSLOW said that such cases were not so infrequent in this climate as many supposed. All cases he had seen were Germans. He does not agree with Dr. Johnson in the treatment with the aspirator. Small abscesses may be cured by the aspirator. An abscess of the liver should never be allowed to break. It may break inward, and cause death.

DR. WM. OSLER said he had seen more abscesses of the liver in the sixteen months that he had been in Baltimore, than in five years in Philadelphia. Some abscesses will not get well by aspiration; often they are so low down in the liver that they cannot be found except by laparotomy. Very often there is also a multiple pyelo-nephritis. He related a case in which the diagnosis was only made by incision.

DR. PRESTON also related a case of hepatic abscess occurring in his practice.

DR. JOHNSON closed the discussion.

DR. GEO. J. PRESTON read a paper on the **DIFFERENTIAL DIAGNOSIS AND TREATMENT OF PERIPHERAL NEURITIS.**

He gave the pathology of the disease, its manner of invasion, the symptoms, and said it was often confounded with polyo-myelitis in the adult. He related a number of cases occurring in his practice. He thought that it was of more common occurrence than was usually supposed.

DR. WM. OSLER agreed with Dr. Preston in saying that peripheral neuritis was more common than usually supposed. There are often mistakes in the diagnosis, unfortunately. The gait is very characteristic. It is the "steppage" of the French, in which the foot is lifted high, to get the toes raised off the ground. This is so characteristic, that the diagnosis can be made from it alone. He had seen it after alcoholism, arsenical poisoning, and typhoid fever. It is so much like locomotor ataxia, that an unfavorable prognosis is apt to be made. He referred to a case in his own practice in which neuritis was mistaken for ataxia.

DR. H. HARLAN then read a paper entitled *Pyoktanin in Eye Diseases*. He was led to use pyoktanin from its unusual claims, as given in *Merck's Bulletin*. He thought it impossible for it to do so much. He had given it a very thorough trial, and was more than pleased with it. In some cases nitrate of silver was better.

DR. H. WOODS then read a paper on the *Injurious Use of Remedies in Eye and Ear Diseases*, in which he discussed the use of wrong remedies or strong remedies producing harm. Much of this was done by the general practitioner, who did not want to pass a case over to a specialist.

DR. HARLAN said he had seen such cases as related by Dr. Woods.

DR. WM. P. CHUNN read a paper entitled *Remarks on Vaginal Examinations*, and gave some very useful hints, and was well received by the Society.

DR. CHAS. P. NOBLE, of Philadelphia, thought the touch was often better than the speculum, except in cases of deep-seated tumors of the uterus, etc. He spoke of the methods of examination at the patient's house, etc.

DR. WM. B. CANFIELD read a paper entitled *Immunity and Protection from Disease*, in which he reviewed the latest theories on this subject.

After the election of new members, and routine business, the Society adjourned.

SUNBURN ON THE ALPS.—This is the subject of a paper in the *Alpine Journal*, by Dr. R. R. Bowles, Folkestone, England, whose contention is that sunburn is caused by the violet or ultra rays of light reflected from the snow, which reflected light is not, of necessity, the same in quality as that which is incident.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, October 17, 1890.

V. P. GIBNEY, M.D., CHAIRMAN.

NON-UNION OF FRACTURED RADIUS.

DR. C. A. POWERS exhibited a patient in whom this condition had existed for many years, and also showed an extension apparatus which had given relief. The first fracture occurred twenty-nine years ago at the junction of the middle and lower thirds. A re-fracture took place eighteen years later, and united with deformity and disability. The radial nerve had become involved in the callus, and this gave rise to such intense pain that she underwent an operation for its relief, five years later, in which the bone was again fractured. All attempts to cause this fracture to unite failed. When she came under the care of the speaker in May of the present year, it was found that the carpus had slipped upwards with the lower fragment of the radius, and had caused the ulna to project very forcibly against the soft parts, giving rise to much pain in the region supplied by the ulner nerve. As further operative measures were not deemed advisable, a simple extension apparatus was applied, and had answered admirably.

DR. A. M. PHELPS said that he thought it had been wisely decided not to subject the patient to further operation, as fractures of the radius and of the lower third of the tibia were peculiarly prone to non-union. Out of about three hundred osteotomies he had had only one case of non-union, and that was after an operation for the correction of an anterior tibial curve. Operations by himself and others had failed to bring about union. Thomas, of Liverpool, claimed that such fractures could be made to unite by pounding the parts with a mallet; but in his experience, this method had not proved successful, and he thought that where there was muscle between the ends of the bone, and the peculiar ivory-like condition of the ends of the bone, which was not uncommonly present, none of the methods heretofore proposed were likely to prove successful. He had very recently proposed and performed an operation which he thought might prove successful. It consisted in cutting down upon the ununited fracture, freshening the ends of the bone, and grafting in between them a part of the forearm of a dog, both patient and dog being secured in plaster of Paris. When the graft had united firmly, the dog's leg would be amputated, and the skin flaps of the dog united to those of the patient.

HIP-JOINT DISEASE AFTER TYPHOID FEVER.

DR. J. MC. G. WOODBURY presented a girl of 11 years, who six months after a severe attack of typhoid fever was found to have some limitation

of motion and pain at the right hip, with distension of the capsule. Flexion caused lordosis, and some pain. She was treated by counter-irritation over the joint, and a plaster of Paris spica bandage, and was allowed to walk around upon a high patten, with crutches. Now, after a period of eight months, there was no pain.

A CASE OF OSTEO-MALACIA.

DR. WOODBURY also presented a case of this nature. The patient had lived in Switzerland until 20 years of age, and had suffered considerably from exposure during the late war. On October 26, 1886, when 43 years of age, he sustained a fracture of the surgical neck of the left humerus, and between that date and May 26, 1890, he received five other fractures, viz., two of the left humerus, two of the right humerus, and one of the left clavicle. Most of these fractures were caused by very slight falls. During the last three months, but more particularly since the first of last August, a tumor has been rapidly growing between the sites of the two fractures of the shaft of the right humerus. Two small tumors may be observed upon the clavicle—one at the point of the fracture, and the other, to the inside of it. A specimen removed from the large tumor with a harpoon was sent to Dr. J. S. Ely for microscopical examination, and he reported that it contained "polyhedral cells, and occasional large spindle and giant cells." He adds, that this "speaks very strongly for sarcoma." A loud murmur, similar to that heard in aortic aneurism, is audible over the large tumor. Dr. Woodbury said that as in cases of tumor of the middle of the spinal cord, osteo-malacia due to trophic disturbances is one of the early symptoms, concurrent with disturbances of sensation, he had referred the case to Dr. M. A. Starr with the hope of learning more about the etiology of this interesting condition. Dr. Starr examined the patient on two or three occasions—the last time, only a few days ago—and had reported that there was no central lesion of the cord. The patient had had no pain with the fractures, or upon re-setting these bones, and this, together with the fact that there had been no fractures of the lower extremity, seemed to favor the view that the condition was due to a syringo-myelia, or tumors of the cord.

DR. POWERS said that Dr. Woodbury's case of multiple fracture with tumors was very similar to a case of multiple sarcomata which he had recently presented to the Surgical Section.

DR. V. P. GIBNEY thought that the pulsation in the tumor might be due to the condition of the tumor itself—in other words, it might be a pulsating sarcoma.

ANKLE-JOINT DISEASE.

DR. A. B. JUDSON presented a case of this disease which he said was interesting because the

child had suffered from this condition almost all her life. The disease began at the age of 1 year and she is now about 7 years old. Notwithstanding that she had been under mechanical treatment only two years, she had recovered with but little disability and deformity. There was considerable lateral motion at the ankle-joint; extension was almost normal; flexion was arrested at about ninety degrees. Scars on both sides of the ankle showed where abscesses had opened spontaneously. There was a difference of one inch between the two calves, and the shortening amounted to only a small fraction of an inch. This result had been obtained by the aid of the simple brace, and without resorting to operation.

DR. JOHN RIDLON presented an astragalus which had been removed by Dr. B. Farquhar Curtis from a child, which had been brought to the speaker when only six weeks old. He had faithfully tried stretching, and the various retentive appliances during a period of one and one-half years. Dr. G. S. Huntington had then operated by Dr. A. M. Phelps' open method, but without improving the condition. The specimen which he presented was interesting on account of two bony prominences which it showed, and which apparently had been the obstacle to flexion of the foot.

THE TREATMENT OF ANKLE JOINT AND TARSAI DISEASE.

The paper of the evening, with the above title, was read by Dr. T. Halsted Myers, who also presented a patient illustrative of this subject.

DR. MYERS said that tubercular inflammation might attack, first, the synovial membrane, later, the cartilage, and lastly, the bone; or the primary local focus might be in the bone. While it was still confined to the synovial membrane, a number of surgeons recommended erosion. If it had attacked the bone, many more urged operative methods, irrespective of the general health of the patient. The author considered only the latter condition.

Simple incision was of no advantage, for we had no element of tension, as in acute processes, and we only opened new channels of infection, leaving the original disease unchanged. The usual method of treatment, curetting the abscess walls, and the sinuses, could not be expected to remove all disease, and would greatly increase the risk of absorption. The success which had been secured in some of these cases seemed to be due to the power of the antiseptic agent to render inert the bacilli which remained. The rational method was to remove all the disease at once; but apparently healthy bones contained tuberculous foci, and hence, it was a most difficult problem to know when to stop, and in fact, this could not be determined at the time of operation. If all the disease were successfully removed, the

duration of treatment was less than under conservative methods. The ultimate results were, however, less satisfactory. He had seen a considerable number of misshapen and atrophied feet after operative treatment, which were weak and painful, and required support to render them able to bear the weight of the body. He had not observed such results from conservative treatment. It was confessedly difficult to ascertain the ultimate results; and although Dr. Schaffer had kindly placed the records of the New York Orthopaedic Dispensary at his service, he had not been able in the short time at his disposal to do more in most of the cases than quote the histories.

The number of cases treated before July, 1888, was fifty-five, and of these, he knew personally that at least twenty-one were cured. Five were cases of synovitis, and sixteen of osteitis. The average duration of treatment in the latter was twenty-one and one-half months, the longest case being under treatment fifty-five months. The results in all were extremely good; yet under careful private treatment, still better results should be expected.

From our knowledge of the various ways in which the bacilli of tuberculosis may be spread in the body, it would seem that a primary tubercular process in a joint must be extremely rare. Drs. Prudden, Northrup, Biggs, and Thacher, to whom he had written for information on this subject, all considered that these affections were generally secondary, but agreed that primary joint lesions did occur. The practical importance of this was that the danger of general infection from a joint lesion which was not interfered with surgically was an entirely unknown, and probably extremely small, quantity.

Of the whole number treated (fifty-five), but three had died—one of diphtheria, one while tarsal disease was active, and the other, six months after a note of "nearly cured" had been recorded. In neither of the latter was the cause of death stated. However, in Dr. Scudder's report of eighteen cases of excision, six deaths occurred; three were due to the operation, or its direct effects; another might have been; and the other two were from tuberculosis, but occurred one and two years after the operations.

The treatment of synovitis consisted in absolute protection of the joint from traumatism. In children, he considered a perineal crutch absolutely necessary while walking. Ordinary crutches were invariably laid aside at times, and the joint left unprotected. In addition to this crutch, the foot should be protected by a splint to avoid local injuries, and to maintain a good position. There being no involuntary muscular spasm, while the disease was confined to the synovial membrane, traction was not necessary.

In cases of osteitis, the same protection of the joint was imperative, and if there were pain and

spasm, indicating the necessity for traction, this could be applied at the ankle, by means of a Dow's brace, or the apparatus of Dr. Sayre, or Dr. Foster.

The application of adhesive plaster to a painful ankle required more care than a dispensary case was willing to give, especially when abscess was present. For this reason, he had found it most serviceable to employ a leg brace, or plaster splint, worn constantly, and a perineal crutch for walking, which could be laid aside at night; or the Dow's brace as modified by Dr. Shaffer might be used.

Abscesses should be left entirely alone, and the sinuses simply kept aseptic. After the joint was considered cured, it was well to wear an ankle brace for some months to prevent twists. The malpositions found in the acute stages, were almost entirely due to muscular spasm, and did not require tenotomy, or other operative treatment.

In the later stages, there might be bony changes, and these, if not painful or progressive, did not require treatment. However, if these conditions did exist, and yet there was no evidence of active disease, an attempt should be made to restore and preserve the normal relations of the parts.

The value of hygienic surroundings during the treatment of these cases, could not be overestimated. His observations had been made on children only, and for contrast, an extended series of cases in the adult would be very valuable. Without exception, every one of his cases of ankle-joint or tarsal osteitis in children had done well under conservative treatment, and he had yet to see the case which he would condemn to erosion or excision.

DR. N. M. SHAFFER said that his own experience led him to think that one point in Dr. Myers' paper should be particularly emphasized, *i.e.*, the necessity of absolute protection of the articulation. He had accomplished this in practice, whenever possible, by the use of a modification of Dow's brace, and had found that adhesive plaster was rarely required, as a well fitting shoe made efficient counter-traction. He thought that the further removed the tuberculous joint was from the centre of the body, the more benign was the disease, and the less the danger of general infection; and he was inclined to speak more strongly of the conservative treatment of ankle-joint disease, than of any other articulation in the body.

DR. RIDLON thought these cases did well with the Dow's instrument; but with this as with some others, we could not secure immobilization, but only protect the joint from the jar of walking. He had seen such excellent results in cases of suppurative ankle-joint disease without any treatment whatever, that he often doubted how

much of a good result could be attributed to the treatment received.

DR. H. W. BERG said that he had had such good results in the treatment of phthisis by the administration of the bichloride of mercury in doses of one-twenty-fourth of a grain, three times a day, that he was inclined to believe the old theory that tuberculosis was really a change in the syphilitic virus due to passing through several generations. He considered that splints like Dr. Judson's were imperfect, for, by taking their bearing from the outside of the foot, intra-articular pressure was increased. To diminish this pressure, the foot must be adducted and rotated inwards.

DR. PHELPS was of the opinion that the vast majority of these cases were cured by immobilization and relief of intra-articular pressure, but in suppurative cases, he believed that the soundest and most scientific surgery demanded operative measures. If we could protect the hip-joint as well as the ankle-joint, we ought to get equally good results in hip-disease. He believed that these cases were inoculations of pathogenic germs on a diseased surface, and that they were purely local.

DR. R. H. SAYRE exhibited a splint which his father had devised for an adult with ankle-joint disease. He agreed with Dr. Ridlon, that it was difficult to apply traction at this joint, but he thought this splint solved the problem. His views regarding the prognosis and treatment of this disease, were in accordance with those just expressed by Dr. Phelps.

DR. SAMUEL LLOYD said that fifteen cases of adult ankle-joint disease had been treated in the New York Post-Graduate School by the so-called conservative method, but the relapses had been very frequent, and he thought this method was less likely to yield good results in adults than in children. In answer to questions from the Chairman, he said that several of the cases were due to injury, and a number of them were suppurative, while four were recorded as synovitis. Two of the cases had been discharged as cured before 1883, and were known to be well in 1889.

DR. JUDSON protested against the statement that cases of disease in the ankle would do equally well without treatment, although neglected cases of ankle-joint disease would have nothing like so bad a deformity as those at the hip.

DR. H. L. TAYLOR also spoke about the different mechanical conditions present at the various joints. The weight of the limb exerted great leverage upon the joint, especially in a spasmodic condition of the muscles. It is more marked at the hip than at the knee, and very much more noticeable than at the ankle. He referred to a case of ankle-joint disease occurring in a distinctly phthisical subject, where the sinuses were treated

by injections of a saturated solution of iodoform in ether. The beneficial effect upon the healing process was almost magical.

DR. GIBNEY said that about ten years ago, the Surgical Section of the Therapeutic Society of New York, spent about two years collecting data relative to the comparative results obtained by the operative and non-operative treatment of this condition; and the conclusion was, that the conservative method yielded the greatest number of useful ankles, even in cases where the foot was seamed with cicatrices. There were two or three operative cases having a high degree of equinus, and a stiffened and shortened joint, and one or two flail joints were also shown. In his experience, cases of adult ankle-joint disease relapsed again and again on the slightest provocation; later on, abscesses would appear; still later, pulmonary signs would develop, and then amputation would follow. As regards the mercurial treatment of tuberculous disease of the joint he need only call attention to the fact that many years ago the routine treatment for these cases at the Hospital for Ruptured and Crippled was one twenty-fourth of a grain of the bichloride of mercury in the tincture of bark, three times a day; and the results attained by this treatment were certainly far from striking.

DOMESTIC CORRESPONDENCE.

Shall The Journal be Removed to Washington?

To the Editor:—The short editorial in *THE JOURNAL* of December 13, touching the question of its removal, is to the point. The responsibility of such a change should be with the members of the Association. The objection to leaving the decision of the matter to the next meeting is, that it will be composed largely of members from one section of the country, and those not in attendance, but equally interested, will be deprived of a voice in the matter. The question is too important to be settled by a partial vote. But how is it to be determined whether the Association is for or against its removal?

Let the question be submitted to the whole Association. For this purpose prepare blanks for votes. These can be sent with *THE JOURNAL*. When filled by those entitled to vote, send direct to the Secretary of the Association.

In this way, it appears to me the sense of the members may be obtained with but little trouble, and a possibly vexatious question satisfactorily adjusted.

MADISON REECE, M.D.

Abingdon, Ill., December 12, 1890.

To the Editor:—In compliance with the invitation of the Trustees to discuss the resolutions re-

ferring to the removal of *THE JOURNAL* from Chicago to Washington, I beg leave to inquire what reasons the Committee have for making this change? This is a question which has agitated the American Medical Association more or less for years, and at one time assumed a sectional aspect, of the East *vs.* the West. The former seemed to hold to the idea that all the brilliant minds of our profession resided in the East, and for this reason the home of *THE JOURNAL* should be nearer the Orient.

Whilst I have no reflection to cast on the brilliancy of the medical profession in the East, yet I am of the opinion that that argument will no longer hold good.

It does seem to me that there are quite a number of good and sufficient reasons for keeping *THE JOURNAL* at the old homestead, where it was born, spent its childhood days, grew into manhood, and has matured into a good, healthy, robust adult, able and willing to take care of itself. Chicago is not only a great city but a great medical centre, and well worthy to be the home of our National Journal. It is not only more central, but a much greater railroad centre than Washington, its great trunk lines extending in all directions across the continent, from north to south and east to west, on which the fastest trains fly to and fro like the weaver's shuttle every hour, thus facilitating the rapid collection of material for *THE JOURNAL*, as well as the speedy distribution of *THE JOURNAL* to all parts of the world.

In conclusion: until there is a preponderance of evidence showing the unquestioned necessity for such a change, I stand as I did before, in favor of *THE JOURNAL* staying where it is.

R. HARVEY REED, M.D.

Mansfield, O., December 13, 1890.

Ether and Chloroform in Convulsions.

To the Editor:—On page 835 of *THE JOURNAL* for December 6, chloroform is suggested for convulsions in children, without any word of caution. I have used both chloroform and ether in convulsions of children, and, while I am not sure of any dangerous result from the anæsthetic *per se*, yet I never give it without extreme caution.

The following case is the first of the kind in my practice, and I have not related the case to any one so far who has had a similar experience—therefore I suppose it must be unusual. July the 25th last I was hurriedly called to see a little boy aged 4 years, who had been under treatment for fever and vomiting during the day. I found him in a convulsion which had lasted about four minutes. I noticed nothing unusual about the case, more than we usually see in a child with a convulsion, and supposed it was caused by excessive vomiting and fever.

I gave him a few minims of ether by inhala-

tion, which checked the spasm about the third inhalation. As I had my finger on the pulse all the while, I noticed that it disappeared with the spasm. I at once applied my ear to the chest and noticed that the heart was beating at about the rate of 250 per minute. This rate lasted perhaps twenty seconds, then dropped to the rate of about twenty-five beats to the minute. This pulse-rate continued about ten seconds, when the heart stopped. Respiration was not perceptible after the spasm left.

I learned from the attending physician a history of malaria. Patient had been treated with domestic remedies for "dumb chill" for two weeks previous to the attack, the last chill leaving patient with vomiting and fever, for which the physician was called in about four hours previous to the convulsion. He did not consider patient seriously sick, and was shocked to learn of the sudden termination of the case.

W. F. ROCHELLE, M.D.

Jackson, Tenn., December 8, 1890.

Seventh International Congress of Hygiene and Demography.

To the Editor:—I am requested by the Honorary Secretaries of the Committee of Organization of the Seventh International Congress of Hygiene and Demography, to call attention to the fact that this Congress will be held in London during the week beginning August 10, 1891.

The Governments of all countries, and municipalities, and all public health authorities, universities, colleges and societies occupied in the study of the sciences more or less immediately connected with hygiene, are invited to coöperate and appoint delegates to represent them at the Congress. The Prince of Wales will preside.

A Committee of Organization has been formed of which Sir Douglas Galton is Chairman, and Prof. W. H. Corfield and Mr. Shirley F. Murphy are Honorary Secretaries. An exhibition of articles of hygienic interest will be held in connection with the Congress. The last of these Congresses was held in Vienna in 1887, and was attended by over 2,000 persons, and it is expected that the London meeting will be one of great magnitude and importance. Very respectfully,

JOHN S. BILLINGS, M.D.,

Member of the International Permanent Committee.

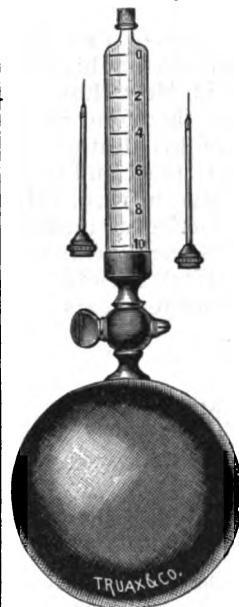
Washington, D. C., October 27, 1890.

DR. SAMUEL BOURNE SWETT, the Boston Surgeon, died December 6. He was probably the last survivor of that colony of young physicians in Paris of whom Holmes has lately written in the *Atlantic Monthly*. He graduated from the Jefferson Medical College in 1834.

NEW INSTRUMENTS.

KOCH'S HYPODERMIC SYRINGE.

A very important result of bacteriological study is seen in the introduction of instruments that can be readily and thoroughly sterilized. To



this end surgical instruments are now made as simple as possible and with the fewest number of crevices for the accumulation of dirt. An instrument, to be acceptable at this day, must possess not only simplicity of form but must also contain no materials that prevent it from being subjected to the most approved methods of sterilization.

In order to secure the advantages of an entirely aseptic instrument for the injection of his inoculation lymph, Prof. Koch has invented a new syringe to take the place of the old Pravaz pattern. Owing to the universality of the interest taken in Koch's new method of treating tuberculosis, this instrument will doubtless come rapidly into vogue throughout the world.

Through the courtesy of Messrs. Chas. Truax & Co., of Chicago, we are enabled to present a cut of one of the first of these instruments to be imported into this country. It is a very simple matter to sterilize this syringe each time after use. To accomplish this purpose a rubber bulb has been substituted for the piston of the older instruments. The cylinder is provided with a centimetre scale etched upon the glass, each division of the scale representing one-tenth ccm. The metal work of the syringe is particularly well fitted to the cylinder in an air-tight manner. So that the instrument can easily be taken apart and cleansed, which is best accomplished by means of absolute alcohol.

NECROLOGY.

DR. JAMES L. STEWART, died December 6, at his home in Erie, Pa., aged 66 years. He graduated from the Medical Department University of Pennsylvania in 1848, and entered the U. S. service as surgeon of the 3rd Pennsylvania Cavalry in July or August, 1861, but resigned March 11, 1862, after a hospital experience in Washington, D. C. He became President of the Penn-

sylvania State Medical Society in 1879 and was member of the Medical Congresses of 1876 and 1887. He also was a delegate to the Tenth International Medical Congress at Berlin, and had just returned. The sorrow of his life was the murder by the Apaches of his only son Lieut. Reid Stewart some eighteen years ago.

DR. E. HUGGINS BISHOP, one of the oldest residents of New Haven, Conn., died at his home on October 2. He was born in New Haven on February 11, 1807, and was therefore in his eighty-fifth year at the time of his death. He was a graduate of Yale, class of 1826, and of the medical department of the college in 1829. Most of his life was spent in the practice of medicine in his native city, and was for several years president of the New Haven Hospital Society. He retired from active practice about ten years ago.

MISCELLANY.

IN MEMORY OF RICHARD J. LEVIS.—At a meeting of the Faculty of the Philadelphia Polyclinic and College for Graduates in Medicine, the following preamble and resolutions were unanimously adopted:

WHEREAS the Divine Ruler of the Universe has seen fit to remove from among us Dr. Richard J. Levis, our friend and our colleague, therefore be it *Resolved*, that not only in the Emeritus Professor of Surgery of the Philadelphia Polyclinic but the whole medical profession have lost an honored and faithful co-laborer, and the community have cause to mourn a skilful and learned physician and honest and sympathizing friend.

Resolved, That by his kindness of manner, by the thoughtful interest which he always manifested in the younger members of the profession, by his encouragement, his earnestness, and his example, he had endeared himself to all, and that if we fitly honor and cherish his memory we must emulate his zeal, and vie with each other in carrying forward the great work in which he was so ardently engaged.

Resolved, That we tender to his family in this sad hour of affliction, our heartfelt sympathy.

Resolved, That these resolutions be handed to the family of our beloved friend, and to the medical journals.

THOS. J. MAYS, President.

S. SOLIS-COHEN, Secretary.

LETTERS RECEIVED.

Codman & Shurtleff, Boston; Clark, Forbes & Co., Miamisburg, O.; Dr. L. G. Contri, Wide Awake, Ky.; Geo. S. Davis, Detroit, Mich.; Dr. H. E. Jones, Elmira, N. Y.; Dr. J. D. Middlebrooks, Dr. A. B. Patterson, Atlanta, Ga.; Dr. E. S. Tuley, R. A. Robinson & Co., R. E. Queen, Dr. F. W. Samuel, Louisville, Ky.; Dr. Samuel Wolfe, Dr. W. B. Atkinson, University of Pennsylvania Press, Dr. John Aulde, Philadelphia; Dr. A. L. Worden, Dr. H. A. Clelland, Detroit, Mich.; Dr. A. R. Baker, Cleveland, O.; Wm. Whitford, Dr. Edmund Andrews, Rush Medical College, Chicago; Dr. Mattison, Dr. L. A. W. Alleman, Brooklyn, N. Y.; New Orleans Med. and Surg. Journal, New Orleans, La.; Hiram Ricker & Sons, South Poland, Me.; Dr. H. W. Carpenter, Oneida, N. Y.; Dr. W. C.

Miller, Hyndman, Pa.; Dr. R. C. M. Page, New York Academy of Medicine, Maltine Mfg. Co., I. Jaros, J. T. Madden, I. Haldenstein, Leonard & Co., Dr. Simon Baruch, New York City; Dr. Paul Paquin, Columbia, Mo.; S. P. Teasgow, Peru, Neb.; Dr. Robert Battey, Rome, Ga.; C. A. Rust, Saginaw, Mich.; Dr. H. Moulton, Fort Smith, Ark.; Dr. Walter Wyman, J. A. Hill & Co., Washington; Dr. R. L. Nourse, Washburn, Wis.; Dr. T. J. Happel, Trenton, Tenn.; Dr. Walter Channing, Brookline, Mass.; Dr. T. T. Hillman, Birmingham, Ala.; Dr. G. C. Holcomb, Ulster, Pa.; Lambert Pharmacal Co., St. Louis, Mo.; Dr. H. A. Carrington, Buffalo, N. Y.; Dr. A. Ravogli, Cincinnati, O.; Dr. J. T. Reeve, Appleton, Wis.; Moore's Subscription Agency, Brockport, N. Y.; Dr. Isaac Louis, Boston; Dr. F. J. Hutton, Fort Mojave, Ariz.; Dr. A. P. Clarke, Cambridge, Mass.; Dr. R. Harvey Reed, Mansfield, O.; Dr. Madison Reese, Abingdon, Ill.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 6, 1890, to December 12, 1890.

Capt. Charles M. Gandy, Asst. Surgeon, now on leave of absence, will report in person, without delay, to Col. Eugene A. Carr, Sixth Cavalry, at Rapid City, S. Dak., for duty with troops in the field, reporting also, by letter, to the commanding General, Dept. of Dakota. By direction of the Secretary of War. Par. 14, S. O. 287, A. G. O., Washington, December 9, 1890.

Capt. Marcus E. Taylor, Asst. Surgeon, is relieved from further duty at Boise Bks., Idaho, and will proceed, at the expiration of his present sick leave of absence, to Vancouver Bks., Wash., and report in person to the commanding officer of that post for duty, reporting also, by letter, to the commanding General, Dept. of the Columbia. By direction of the Secretary of War. Par. 17, S. O. 287, A. G. O., Washington, December 9, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 13, 1890.

Medical Director Delevan Bloodgood, ordered to Charleston, S. C., to represent the Medical Corps U. S. N. at meeting of American Public Health Association.

P. A. Surgeon H. E. Ames, ordered as delegate to Charleston, S. C.

Surgeon D. N. Bertollette, detached from Naval Hospital, Philadelphia, and ordered to special duty in connection with World's Columbian Exposition.

P. A. Surgeon S. H. Dickson, from the "Atlanta," and granted two months' leave of absence.

P. A. Surgeon A. R. Wentworth, to the "Atlanta."

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending December 6, 1890.

Surgeon C. S. D. Fessenden, leave of absence extended seven days. December 4, 1890.

Surgeon P. H. Bailhache, granted leave of absence for twenty days. November 28, 1890.

Surgeon W. H. H. Hutton, to proceed to Solomon's Island, Md., on special duty. November 29, 1890.

Surgeon H. W. Sawtelle, granted leave of absence for ten days. December 2, 1890.

P. A. Surgeon C. T. Peckham, granted leave of absence for ten days. December 1, 1890.

Asst. Surgeon S. H. Hussey, when relieved, to proceed to New Orleans for duty. November 24, 1890.

Asst. Surgeon J. F. Groenevelt, when relieved, to rejoin station. November 24, 1890.

Asst. Surgeon L. E. Cofer, ordered to temporary duty at Boston, Mass. Nov. 24, 1890.

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CHICAGO, DECEMBER 27, 1890.

No. 26.

ORIGINAL ARTICLES.

EMPHYEMA AND PULMONARY ABSCESS.

BY P. C. REMONDINO, M.D.,
OF SAN DIEGO, CAL.

Your interesting editorial on the necessity of a careful diagnosis in these affections, so as not to overlook the possibility of an empyema, are to the point. Too many patients are sent to sanatoriums with an hepatized lung requiring *absolute rest* even to the point of strapping the chest at times, and are simply told that they will not require any medical advice, but on their arrival they are simply to take all exercise possible—advice that they not only take but are sure to overdo—a weakened heart and an impervious lung, with its tissues on the balance as to whether they shall go towards health by proper resolution or go into softening and decay, very soon render a simple case of the most common results of pneumonia that would otherwise recover, into one simulating a case of advanced phthisis, and with the same disastrous results. Eighteen years of practice among a class of pulmonary invalids, with some scores of post-mortems that in many cases developed the fact that quite a large percentage of pulmonary fatal cases were not of tubercular phthisis, or even of simple, chronic consumption, but cases originating in an acute sthenic pneumonia or pleurisy, ending by improper and careless advice about "roughing it" into an inevitable break down of the lung and the patient.

Not alone is the poor patient allowed to die and be buried after an easily avoidable death, but his progeny must go through life feeling that "tubercular phthisis" is in them and of them, to dissuade them from this or that vocation, interfere in prospective marriage ties, and make many reluctant to launch offspring, with such a taint, into the world. Then, again, the life insurance examiner stumbles against the phthisical death of father, brother or uncle, to make him hesitate as to the advisability of taking the risk. The effect of a mistaken diagnosis in such cases is far-reaching—even in years after the poor patient has been resolved into the elements, arising

now and then to harass his progeny and to cloud his life with dark forebodings.

During eighteen years I have in my own practice run on to six such cases. One very interesting case being that of a Russian physician who became an inmate of the San Diego County Hospital, as a consumptive. On admission he asked me as a favor to allow him to treat himself as he knew what was best for him, even declining a physical examination which I proposed making. He had been in Chicago hospitals, and also in those of San Francisco before coming here. One Sunday morning on my hospital rounds I entered his room, as he was in the act of drawing off his under-shirt, his back was towards me and the opening door caused a coughing spell, when I at once caught sight of the bulging intercostal spaces on inspiration and the greater extent of the right chest when compared to the left. The aspirator withdrew *seventy-four ounces* of pus. The patient made a tolerable fair recovery (having been ill two years), and was able to resume the practice of his profession, dying some two years afterwards from exposure during a cold winter in the mountains while in the arduous work of his profession. Now, here was an intelligent physician, well skilled in diagnosis, well read, and with great clinical and hospital experience in the hospitals of St. Petersburg and of Moscow—with seventy-four ounces of pus filling his right pleural cavity and he perfectly oblivious of the fact.

Another case had carried seventy-eight ounces of pus in the left pleural cavity for over a year, coming from the malarious plains of Italy in the meanwhile. The attack originating in a pleuropneumonia consequent on convalescence from a protracted attack of malarial fever. This patient was laboring under blood poisoning at the time of operation, and died about six weeks afterwards from that cause.

One case, also of great interest, a gentleman from Spokane Falls, Washington, had an attack of pleuro-pneumonia in December, 1889, which nearly took his life. From this he escaped with an hepatization of the lower lobe of the right lung, and extensive adhesions of the pleura to the side and back of the same side. His physicians, Drs. Essig and Manley, then advised a

change of climate, directing Southern California as the proper locality. The patient came here, and on the advice of one of the local physicians he departed for the mountains, to an altitude of some 3,000 feet. He then fell in the care of another physician. While in the mountains he failed very rapidly, and on the advice of his brother, from Spokane Falls, he finally decided to return to San Diego for other advice. On his arrival here his wife called upon me, and asked me as a favor, that if I found her husband past all help to tell her privately, and to advise a removal back to Washington, where he might die among his friends and relatives. On my examination I found a large framed man who had always been well up to the time of his present illness, had weighed 207 pounds, but was now emaciated and broken down; feet and legs œdematous, face puffy, hands also œdematous, very short breath and a constant cough. The left lung exhibited all signs of perfect physiological health, as well as the right, excepting a circumscribed spot of dulness about the size of a dessert plate in the rear and lower portion of right chest. The lower edge of the lung along the side seemed healthy and perfect, along the side and above that the same flat dulness was perceptible; the front was chequered with spots of dulness and resonance. I diagnosed the case as one of pulmonary abscess and decided on an operation, in which I was assisted by Drs. McKay, Davis and Magee, of this city. On our consultation it was hard to demonstrate the presence of pus by any of the usual symptoms or signs, as the pus was enclosed in a close and tight sac, which gave neither metallic tinkling, wave motion, bulging or any other sign. The first aspiration withdrew forty ounces of sweet pus, and a subsequent tapping with a large canula and trocar brought twenty-five ounces more. The cavity was then well irrigated with a solution of salt and water until the water was returned clear. The tube through the canula was then allowed to remain for eight days, the last five of which showed only a little discharge of pinkish fluid; canula, tube and all were removed and the puncture allowed to close. Two hours after the operation the patient was in the greatest comfort. The œdema of the face began to subside and the yellow tinge of the skin had disappeared. The pain in the knees and elbows with which he had been racked night and day, and the distressing cough all left him as if by magic, he rapidly picked up in strength and his temperature, which before the operation never was less than $101\frac{1}{2}^{\circ}$, fell to 98° in the course of two hours, and never again rose to 99° during the first eighteen days, after which he was allowed to leave his bed.

I am satisfied that the abscess was in its formative stage on his arrival in Southern Cali-

fornia, and that the mountain exercise and the practice of chest pounding to which his physician subjected him in pursuance of his form of practice (natural healing) hastened the formation of pus. The case was one of great interest, especially so from the obscurity with which the reading a diagnosis was beset, and the rapid recovery, to say nothing of the almost instant relief that followed the operation.

I agree with you in your remarks on plenotomy. I have operated by the Peyrot method, but have every reason to prefer the aspiration even if persisted in after the method of Bulau. As to irrigation, I would not advise carbolic acid or the iodine washings; after either I have always noticed a tendency to temperature elevation, especially after carbolized water (very weak even, with the acid first well rubbed with glycerine, has never been satisfactory to me). I prefer common salt, an ounce to the quart or even much stronger is well tolerated.

Physicians do wrong to their patients in not advising them to call on a physician on arriving at a health resort. The frequency of the occurrence of cases like the above would indicate the need of an occasional physical exploration, which in many cases would undoubtedly save many from an untimely grave.

CLINICAL OBSERVATIONS ON THE INGESTION OF BORACIC ACID AND ITS EFFECT ON THE SKIN, THE BORACIC ACID ERUPTION SO-CALLED.

Read in the Section of Dermatology and Syphilography, at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May, 1890.

BY WM. T. CORLETT, M.D., L.R.C.P., LOND.,
PROFESSOR OF DERMATOLOGY IN WESTERN RESERVE UNIVERSITY,
CONSULTING PHYSICIAN FOR DISEASES OF THE SKIN TO
CHARITY AND ST. ALEXIS HOSPITALS, ETC.,
CLEVELAND, O.

In November, 1889, my attention was called to a rash occurring in diphtheritic patients treated with large doses of boracic acid. Dr. Sihler, in whose practice the cases occurred, informed me that it appeared after adopting the boracic acid treatment; he had never before seen the rash in diphtheria.

During the months of December, January and February following, I had the opportunity to follow five cases in the practice of the same physician. The onset, course and other clinical features of the rash appeared with marked uniformity. It made its appearance on the seventh or eighth day after the commencement of boracic acid. First on the forehead, neck and cheeks almost simultaneously; then it invaded the trunk and extremities in as many successive days. In its course it bore a close resemblance to rubeola.

Nor was its course the only resemblance it bore to this disease; the rash itself in color, form and distribution, presented a striking similitude to a mild case of measles. On the contrary, the rash was not elevated above the surrounding skin, and it was more itchy than rubeola usually is. It subsided gradually in the course of from three to five days.

That the rash might be due to the diphtheritic poison had occurred to me; to eliminate this, as well as to further test the effect of the drug on the skin, December 2, 1889, sixteen subjects were given the same quantity per diem (3j) as given by Dr. Sihler in the treatment of diphtheria. These subjects were selected from the different departments of the Polyclinic, and were seen from time to time by myself and colleagues. With two exceptions—sycosis non-parasitica and psoriasis—they were free from any eruption on the skin, and most of them were in a fair state of health.

At the end of a week three escaped from further observation; in four gastric disturbances—nausea, loss of appetite, etc.—were so marked that the drug was discontinued after a few days use. No effect was noticeable in the skin. A fortnight passed, one or two more dropped out, no rash.

Of the eight that continued a month, one presented a few itchy tubercles on the forehead. These tubercles involved the sebaceous glands, they were surrounded with a bright red areola, they remained stationary for a month, at which time the drug was discontinued. Of the sixteen, six continued the drug three months, and one seventeen weeks. This latter thought the treatment benefited some visual disorder, and continued with a tenacity worthy more brilliant results. In this case there appeared at the end of four months half a dozen itchy tubercles with a reddish areola, similar to those in the preceding. They were situated on the forehead, scalp and chest.

Boracic acid eruptions, or more properly, eruptions following the use of the drug, have been reported from time to time. These eruptions have differed widely in clinical appearance as well as in other characteristics.

Stillé says a pustular eruption sometimes follows the long continued use of boracic acid. Gower reports in *The Lancet* of September 24, 1881, two cases that developed a typical psoriatic eruption from its use, covering a period of one or two years. In these cases it was found that by adding a few drops of Fowler's solution the eruption disappeared. Morrow, in his admirable monograph on drug eruptions, cites in addition to the above, an instance in which a 4 per cent. solution used as an injection for several days was followed by an erythematous rash over the whole body. Two other instances are cited by the

same author of an erythematous rash over the face, trunk and extremities, after washing out the pleural cavity with a 5 per cent. solution.

Few drugs, if any, have the power of causing the wide range of eruptions herein cited as supposed to be due to boracic acid. Neither does there seem to be any uniformity as to time, or clinical features, in the cases reported. Gowers added arsenic to the boracic acid and the eruption left, which, as we know, might follow any scaly eruption from whatsoever cause.

Of the sixteen subjected to an experimental use of the drug, only two showed signs of a cutaneous disturbance; this is strange when we consider that in all there was marked disturbance of the gastro-intestinal tract, which of itself is capable of producing cutaneous lesions.

The eruptions in these two cases were similar; at the same time they were such as one frequently sees in the subjects of acne when suffering from gastric derangement.

So far then, as these observations go, they teach that if there be an eruption due to the ingestion of boracic acid, its presence is so inconstant; its clinical features are so ill-defined, as to leave grave doubts as to its entity.

333 Prospect St.

THE METRIC SYSTEM AND THE SEVENTH DECENNIAL REVISION OF THE U. S. P.

Read before the Missouri State Pharmaceutical Association 1890.

BY H. M. WHELPLEY, M.D., PH.G.

It is probable that in less than two years the seventh decennial revision of the Pharmacopœia of the United States of America will be in the market and ready for the pharmaceutical and medical professions. The progressive druggists of the country will adopt it their law and guide in the manufacture of pharmaceutical preparations and the identification of all official substances. The doctors who are alive to the interests of the times will look to the pharmacopœia for all information that it contains for physicians.

Among the new features of the revised work will be the adoption of the metric system of weights and measures in the manufacture of preparations. The system of "parts" in the previous revision was more conveniently handled by the metric system than any other, but the new work will have the decimal system itself prescribed.

There seems to be some misunderstanding among the pharmacists of the country as to just what it means to thus adopt the metric system. Some have formed the idea that the doctors will then be obliged to write prescriptions in that system, and I have even talked with those who had conceived the idea that patients must give up the

old-fashioned drops, teaspoonsful, etc., for cubic centimeters. Let such persons learn, once for all, that the pharmacopœia is not a guide in prescription writing or dosing. The adoption of the metric system signifies that druggists are to use it in manufacturing the official preparations made in the drug store. They can buy them, sell them, dispense them, and dose them out in any manner they see fit, for it in no way affects the manufacture. The convention at Washington recognized the system as being the most convenient for druggists to use in this manner, and perhaps it will be many a day before the medical profession becomes sufficiently advanced to adopt it in prescription writing.

Still less excusable is the complaint that some druggists have made when they objected to the new system, as it would cause them to throw away their old scales and balances and buy new ones. Only those ignorant of the first principle of weights and measures could stumble into such a shallow complaint. As far as the weighing goes only the new set of weights must be added. I do not think that any scales or balances are sufficiently stubborn in their innate nature to refuse to respond to metric weights.

Again some one has objected to the metric system and refused to learn a new language for the sake of it. I think they must have studied "French in Twenty Lessons" or "German in Two Weeks" and become scared at the mere mention of a foreign word. It is, indeed, strange that it is necessary to answer such an objection as this, for the terms in the metric system are from the Latin and the Greek. These two languages go far towards making up all words we learn in pharmacy and medicine. Then, when we come to realize that the words "milligram," "gram," "cubic centimeters," "kilo" and "liter" are all that a druggist or doctor need learn, it is strange that any one should for a moment object to the system on the score of the language. In this connection I must quote from a committee of the American Association for the Advancement of Sciences, where it says: "For the use of these professions (medicine and pharmacy) six lines contains all that is necessary," as follows:

1,000 milligrams make 1 gram.
1,000 grams or cubic centimeters make 1 kilo or liter.
1,000 kilos make 1 ton.
65 milligrams make one grain.
15½ grains make 1 gram.
31 grains make 1 ounce troy.

I advise those who object to the metric system to devote a few minutes to its study before they continue to condemn it.

In becoming familiar with the metric system, first study the principle of the system and then learn its relation to other systems.

As nearly all of the text and reference books in pharmacy devote more or less space to the con-

sideration of the metric system, there is no excuse for a druggist saying he cannot find an explanation of the system. May the time soon come when they will all be familiar with it.

MEDICAL PROGRESS.

TREATMENT OF BLEPHAROSPASM.—This annoying and at times intractable affection is treated by Giraud (*Thèse de Paris*) by forcible dilatation. Under cocaine anæsthesia the lids are widely separated, by a pair of retractors, or a spring speculum. The separation of the lids is carried to the degree of exposing the conjunctival cul-de-sac, and it is maintained for three or four minutes. Only in rare cases must this procedure be repeated more than three or four times.

PHOTOPHOBIA CURED BY ANÆSTHESIA OF THE GASSERIAN GANGLION.—GUTTIÉREZ-PONCE, in the *Recueil d' Ophthal.*, relates the circumstances attending this somewhat novel procedure. The patient, a boy, aged 13, suffering from acute diffuse keratitis, was attacked with violent sneezing as soon as the lids were opened and light fell upon the cornea. This the writer attributed to direct irritation of the branches of the ophthalmic division of the fifth pair of nerves supplying the cornea. To overcome this condition a few drops of chloroform was instilled into the right external auditory meatus, and after a few minutes the eye could be opened and thoroughly examined without exciting sneezing.

POISONING BY FILICIS MARIS.—Up to the present three cases of poisoning by this drug have been reported; two of them proving fatal. A recent case reported by HOFMAN (*Wien. Klin. Wochenschr.*) is that of a little girl 5½ years of age, who was given 7.5 grams of the ethereal extract of filicis maris, for the removal of a tapeworm. At the end of one and one-half hour deep sleep ensued, which was followed at the end of three hours by convulsions and death. The post-mortem examination was negative; it simply showing a preëxisting miliary tuberculosis of the lungs and abdominal organs.

ANOSMIA.—DR. ZWAARDEMAKER, of Utrecht (*Schmidt's Jahrbucher*), presents a clinical analysis of the somewhat rare and by no means important disorders of olfaction. He divides the affection into four general groups: a. respiratoria, a. gustatoria, a. essentialis and a. intra-crania. Under essential anosmia he classes those from acute catarrhal inflammations of the nasal mucosa, toxic forms from poisonous gases or fluids, or those caused by absence of the peculiar pigment found in the region of the olfactory.

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SATURDAY, DECEMBER 27, 1890.

CONCLUSION OF VOLUME XV.

With this number THE JOURNAL reaches the conclusion of its fifteenth volume. Seven and a half years have elapsed since the Association assumed the responsibility of publishing its Transactions in the present form. So far as we know, not a single member of the Association now dissents from the method then adopted.

Each year has witnessed a growth of confidence in the enterprise, until its permanency is reasonably assured. We come to the close of the present volume with a constantly enlarging list of contributors, with an increasing membership, and with an advertising patronage never so liberal as at this date. The members of the Association will be gratified to know that not only is THE JOURNAL free from debt, but that it has, of funds, enough in sight to enable it to close the financial year with a satisfactory balance in its treasury. The confidence of a generous advertising public is best indicated by constancy of its patronage.

It will be the aim of the Trustees, to whose supervision it is confided, to make THE JOURNAL more and more fully representative of every medical interest. It welcomes to its columns the proceedings of all medical societies in affiliation with the Association. It is in hearty sympathy with every effort for the advancement of medical education. It seeks the welfare of all legitimate practitioners, and welcomes to its files all medical journals which have at heart the upbuilding of the profession and the welfare of the people.

It seeks from the membership a generous support, and an earnest effort to increase its circulation and to enhance its usefulness.

THE MEDICINE OF THE FUTURE.

Attempts to forecast the future are notoriously involved in much difficulty and uncertainty. The advice of HOSRA BIGLOW: "Don't never prophesy unless you know," will always have more or less pertinency. Nevertheless, so long as curiosity continues to be as potent a motive as at present, the effort will probably continue to be made. He would have been a bold man who should have ventured to predict, fifty years ago, the progress that has been made in medical science and art, and it would certainly be unsafe to attempt to say what will not be accomplished in the next fifty or hundred years; but there are certain tendencies, at the present time, which may, perhaps, throw some light on the probable future course of events. If we compare the best specimens of the medical profession of to-day with their predecessors of a century ago, it may enable us to imagine, to some extent, in what way our successors of a century hence will differ from us.

Of course, the well educated physician of to-day knows a multitude of facts, of importance to him in his practice, of which the greatest men of the past had no conception. This, however, is not, to our mind, the most striking difference between the physicians of the present and of former days. A more important contrast may be found in the relative emphasis laid on the cure and the prevention of disease. Of course there are many survivals of a type characteristic of a bygone age, and it is not unlikely that skepticism in regard to therapeutics may have often been carried too far. Still, it may safely be said that there are very few intelligent physicians of the present day who feel anything like the confidence in their greatly increased resources for combating disease that was felt by the great body of the profession in the bleeding, blistering, purging and puking which made up the great part of the routine of medical practice within the memory of some now living, and, although the progress made in the treatment of disease is by no means to be despised, it can scarcely be questioned that it has consisted almost as much in abstaining

from mischief as in doing good. The records of the Massachusetts General Hospital seem to show that, allowing for differences in the class of patients treated, the death-rate from pneumonia in that institution has not varied very materially since it was opened. Cholera, yellow fever, scarlatina and typhoid fever, do not present any such lowering in the death-rate of those attacked as to be a matter for very much congratulation, and the multitude of remedies recommended for pulmonary consumption shows how unsatisfactory its treatment is. On the other hand, the mortality from cholera, yellow fever and typhoid fever, taking them as examples of diseases in which, until comparatively recent times, there was nothing that could be called an efficient prophylaxis, has been so reduced wherever proper sanitary measures have been carried out as to make it reasonably certain that nothing but the universal enforcement of such measures is needed for their complete extermination.

At first sight, surgery, in its various branches, may seem to be an exception to this rule, but the exception will be found to be more apparent than real. The advances in methods of diagnosis and in operative technique have been, in some departments, very great, but by far the most important difference between the surgery of to-day and that of a comparatively recent period consists in the intelligent application of means to prevent those diseases which formerly so often frustrated the best work of the surgeon. The therapeutics of pyæmia and septicæmia, when the source of infection is not accessible, cannot be said to have made any great advance; it is to the precautions against their occurrence that the greatly diminished mortality from surgical operations is mainly due.

Considered from this point of view, the comparison that is sometimes made between the advancement of surgery and medicine is not so much to the disadvantage of the latter as might, at first, appear. The surgeon, as such, only benefits those who come under his treatment; the sanitarian, even without official authority, may be able to preserve the health of numbers who, but for him, might have sickened and died.

During the last decade the death-rate in England and Wales averaged 1,144 per million less than during the ten years preceding—equivalent to a saving of about 30,000 lives per annum.

This is by no means the whole of the saving; a high death-rate implies a large amount of sickness among the survivors, with loss, not only of the time and earnings of the sick, but of those who are occupied in caring for them. There can be no reasonable doubt that the greater part of this immense saving is to be credited to the efforts of the medical profession directed to the improvement of sanitary conditions.

The superiority, even in the present state of our knowledge, of prevention to cure of disease comes out conspicuously in a comparison of the death-rates of Birmingham and Manchester. Both are manufacturing cities, of not far from equal population, and it is not to be supposed that there is any very material difference in the skill of the physicians of the two towns, taken collectively. Birmingham is widely known to be a remarkably well-governed city, in the thoroughness and efficiency of its sanitary administration as well as in most other respects, while Manchester bears a very different reputation. The death-rate of Birmingham is eighteen, and that of Manchester twenty-nine per thousand inhabitants—a difference of nearly 40 per cent.

Sanitary science is yet in its infancy, and the little knowledge we have has been applied, thus far, on a very limited scale. Whatever advance may be made in therapeutics, it seems safe to predict that the relative importance of preventive medicine will continue to increase for a long time to come, and that the physician of the future will be, to a far greater extent than at present, the adviser of his clients, rather than a tinker, called in to repair damages.

The applications of medical science to some of the most important and difficult social problems are just beginning to be dimly perceived. Although the practicability of a physical diagnosis of crime may, perhaps, be thought to be the dream of enthusiasts, it is becoming clear that the majority of habitual criminals and prostitutes consists of persons whose organization was originally defective, and who are only to a limited extent amenable to the motives that govern the conduct of persons of thoroughly sound mind. A recognition of this fact must, in time, work a great change in criminal jurisprudence. Here, again, it will, in time, be recognized that prevention is better than cure, and that cure is to be effected, if at all, not by penalties arbitrarily inflicted in

a spirit of revenge, but by a course of training scientifically adapted to substituting habits of order and industry for the lawless impulses of a defective character.

Inebriety, again, is coming to be recognized as not merely a vice, but at least equally a disease. The man who has saturated his body with alcohol for a series of years has not merely contracted an injurious habit; he has poisoned his nervous system until it is no longer equal to the effort of self-control that might reasonably be demanded of a healthy man.

These examples are enough to show that, in the not distant future, we may expect that the medical profession will afford a field for statesmanship of the highest order. It is not to be expected that the prejudices of ages will pass away at once, but truth will prevail in the end, and sooner or later it will be understood that the man who teaches his fellows how to preserve their own lives is at least as honorable as he who enables them to destroy the lives of others, or to gain possession of their property without compensation

EDITORIAL NOTES.

BLINDNESS IN RUSSIA.—There are said to be no fewer than 189,872 blind persons in European Russia, Poland, and the Caucasus. In Russia the proportion of blind per 10,000 inhabitants is 21; in the Caucasus it is 15 for men and 14 for women; while in Poland it is only 7. There are three regions in Russia where blindness is particularly prevalent—in the extreme north-west to the west of the White Sea, in the east near the Asian frontier, and in the west near the Polish frontier. The condition is said to be on the increase, chiefly owing, it is supposed, to the spread of purulent ophthalmia neonatorum.

THE FIRST INSANE ASYLUM IN CHINA.—A committee has been formed in Canton, under the chairmanship of Dr. J. G. Kerr, to obtain funds for founding an insane asylum for Chinese. At the present time there is no such institution in the whole of China, and at the missionary hospitals considerable embarrassment has from time to time been caused by the application of lunatics for treatment. In many instances these unfortunate persons have been left on the hands of the physicians, who have no suitable accommodation for such cases. Messrs. Deacon and Co.,

of Canton, will receive subscriptions, and the scheme is strongly advocated by Professor E. P. Thwing, of Brooklyn, New York.

AN ENLIGHTENED DONOR.—M. Alfred Nobel, who is described by the *St. Petersburg Medicinische Wochenschrift* as "the well-known Russian petroleum prince," has given a sum of 50,000 crowns to the Carolina Institute of Stockholm to be applied for the furtherance of experimental research in the sphere of medicine. A committee of Stockholm professors has decided that four-fifths of the interest shall be used every year in aid of scientific investigations on subjects connected with the healing art, the remaining fifth being allowed to accumulate to form a reserve fund.

A NOTE OF WARNING.—From the *British Medical Journal* we quote the following: At the first meeting, for the present session, of the Royal Physical Society of Edinburgh, the opening address was given by Dr. Sims Woodhead, retiring Vice-President. The subject was bacteriological science, and he uttered a word of warning in regard to the too hasty conclusions that were being rushed at in regard to the curability of tuberculosis pulmonum by the new method of Koch. He urged that while Koch himself had been able to support almost every thesis he had hitherto proposed, it was meanwhile necessary to wait till evidence had accumulated sufficiently to afford proof.

Observations on the pulse have shown that after injection the pulse is quickened, at the same time becoming soft, dicrotic and irregular. So compressible is it in some cases, that collapse can only be averted by the free exhibition of stimulants.

Some of von Bergmann's cases are said to have already relapsed. It is also stated that in a case of lupus under the care of Dr. Levy, which was shown as an example of complete cure, the disease recurred with great intensity a fortnight after the discontinuance of the injections.

At a meeting of the Berlin Society of Public Hygiene on November 24, Dr. Köhler summed up as to the discovery by saying that the remedy is unquestionably of considerable importance as an aid to diagnosis, but that, as regards its curative efficacy, the medical profession must suspend its judgment till more definite information, both as to the details of the treatment and its results, is forthcoming.

TOPICS OF THE WEEK.

MICRO-ORGANISMS IN GREAT CITIES.

Professor Tarnier, in his course of lectures on obstetrics, in 1890, referred to M. Miquel's researches on the relative abundance of microorganisms in different places. One to the cubic metre of air is the proportion at the top of a high mountain. In the Parc de Montsouris, in the south of Paris, M. Miquel found 480 microorganisms to the cubic metre of air, whilst in the Rue de Rivoli the proportion was 3,480. In a new room in the Rue Censier he found 4,500 to the cubic metre; more, that is to say, than in the centre of Paris in the open air. In a room in the Rue Monge, he counted 36,000, in the Hôtel Dieu 40,000, and in the Pitié, an older hospital, 319,000 microorganisms to the cubic metre. At the Observatory, Montsouris, 650,000 microbes were found in a gram (15 grs.) of dust; in the room in the Rue Monge the amount was 2,100,000. In the hospitals the proportion was so high that counting the number of microbes in a whole gram of dust was found to be impossible. The dust is the great conveyor of microorganisms. At 2 A.M., when a city is most quiet, the fewest germs are to be found in the air, at 8 A.M. the industry of domestic servants and dustmen has already made the air teem with germs. At 2 P.M. the proportion has again greatly fallen; at 7 P.M. it is once more high, for many houses are being "tidied up;" besides, sundry kitchen operations are unhygienic. Thus the "small hours," unfavorable in many respects to patients hovering between life and death, are the least septic of the twenty-four. The day proportions indicate that household duties cause more septic diffusion than is excited by traffic and industry.—*Brit. Med. Jour.*

THE NEW THEORY OF HEREDITY.

Scientific circles throughout the world have been somewhat agitated of late, by a new theory of heredity broached by the celebrated German biologist, Professor Weismann, of Freiburg. This theory is so subversive of current opinion on matters with which it deals, and assails so many beliefs that were previously deemed impregnable, that a brief review of the leading indications of the theory may not be inopportune.

Professor Weismann's theory seeks to explain what no doctrine of heredity has hitherto adequately accounted for—how a single microscopic cell, imbedded in the ovum of the mother, can reproduce parental characteristics even to minute details and frequently characteristics of grandparents or more remote ancestors. Darwin's doctrine of pangenesis attempted a solution of this problem by assuming that the cells of the body threw off gemmules which were ultimately concentrated in the reproductive cells, the germ cells thus becoming essentially co-substantial with the other cellular elements of the body. The doctrine of pangenesis never, however, held a very sure footing, and its overthrow only seemed to be awaiting the birth of the next biological theorizer.

Two leading principles underlie the basis of Weis-

mann's theory, both of which will strike some as being more in the nature of assumptions than as well-ascertained data for a far-reaching biological induction. The first of these is, that death is not a primary attribute of living matter, and the second is, that characters *acquired* by the parent are not transmitted to the offspring.

The protozoa, the unicellular organisms are, however, alone endowed with this immortality. Composed of undifferentiated protoplasm, apparently structureless, and with no likeness in parts save for the nucleus, these organisms yet essentially perform all organic functions. They may be dried up by frost or drought, but under appropriate conditions they resume their active life. The protozoon may of course be destroyed by fire or accidental agencies, or it may be eaten. It enjoys a potential, although of course not an absolute immortality; under the normal conditions of its environment death does not overtake it. Unfortunately, for the higher inferences the theory would otherwise encourage, the endowment of immortality does not pertain to the metazoa, the many-celled organisms; for, as soon as an organism is sufficiently ambitious to become many-celled it has practically sealed its fate, it has "put on mortality," a conclusion which will doubtless be exceedingly gratifying to the metaphysical pessimists. The metazoa arise from the protozoa by "unequal fission," through the failure of certain unicellular organisms to "divide completely." "The first multicellular organism," says the Professor, "was probably a cluster of similar cells, but these units soon lost their original homogeneity. As the result of mere relative position there arose division of labor, some of the cells were especially fitted to provide for the nutrition of the colony, while others undertook the work of reproduction." The outer cells of the cluster in constant contact with the nutritive medium would be differentiated for nutrition, while the inner cells would undertake the work of reproduction. In these latter cells the reproductive function would be so specialized that they would become the germ-cells, in the nucleus of which resides the germ-plasm. The possession of this would constitute these cells the immortal part of the metazoa. Thus the fundamental key to an interpretation of the facts of heredity lies, according to Weismann, in the "continuity of the germ-plasm." This germ-plasm is so stable that "it absorbs nourishment and grows enormously without the least change in its complex molecular structure," and heredity is secured by the transference from one generation to another of this exceedingly stable substance with a definite molecular and chemical constitution.

All this being so, acquired variations have no direct reaction on the unalterable germ-plasm, and are, therefore, not transmitted. The organism that has acquired one-eyedness, or one-leggedness, or circumcisedness does not transmit these characteristics, because both parent minus the parents' individually acquired characteristics, and offspring arise out of the same substance, and the offspring must of necessity resemble the parents.

But it will be asked how then do variations in organisms occur? Solely through natural selection, for each new organism combines the hereditary tendencies de-

rived from the male and female germ-plasms. This results in individual differences, which multiply in geometrical ratio, so that "in the tenth generation a single germ contains one thousand and twenty-four different germ-plasms with their inherent hereditary tendencies, and as continued sexual reproduction can never lead to the reappearance of exactly the same combinations, new ones must always arise."

Professor Weismann does not entirely deny the influence of external forces upon the germ-cells. In his essay on "The Continuity of the Germ-Plasm," we read: "I am compelled to admit that organisms may exert a modifying influence on their germ-cells." What he does deny is, that functionally-acquired variations or "soma-togenic" variations are not transmissible, only the "blastogenic" variations—the variations occurring in the germ-cells. In this way we understand why club-foot is hereditary, while one-eyedness is not.

Possibly the weakness of Weismann's theory lies in the unsatisfactory way in which it accounts for psychical evolution. How serious are the issues involved in the new theory is exemplified in the following quotation from Herbert Spencer's "Factors of Organic Evolution," which fairly represents the hitherto accepted theory of psychical evolution.

"If functionally-produced modifications are inheritable, then the mental associations habitually produced in individuals by experiences of the relations between actions and consequences, pleasureable or painful, may in the successions of individuals generate innate tendencies to like or dislike such actions. But if not, the genesis of such tendencies is, as we shall see, not satisfactorily explicable."

We refrain from indicating the interesting relations that could be established between this theory and the problem of disease-transmission, or from showing how syphilis and hare-lip originate in "blastogenic" modifications. We also refrain from indicating the exceptions that might be taken to Weismann's argument all along the line, or the objections that could be urged to almost every proposition. We are content if we have shown the great value Professor Weismann's views have been, in stimulating inquiry regarding the soundness of the foundations of any and all theories of heredity.—Editorial, *Physician and Surgeon*.

THE DEADLY CIGARETTE.

Death from cigarette smoking appears to be not uncommon amongst boys in America, according to the *Medical Record* of New York. It appears that two cases occurred during the last week in October; a boy aged 14 died, it was reported, of heart disease "superinduced (*sic*) by excessive use of cigarettes." A boy aged 16 hanged himself because his father refused to give him money to buy more tobacco. A year ago Dr. Broomhead reported a case where a boy aged 13 died presumably from the effects of cigarette smoking. Valvular disease of the heart was discovered after death. Our contemporary wisely adds that since it is not admitted that tobacco can cause organic heart disease, it must be inferred that cigarette smoking is fatal in boys who have cardiac or other dis-

ease already. Kjelberg has described a nicotine psychosis, in which depression and suicidal tendencies are often observed. It is more frequent in snuff-takers and tobacco-chewers than in smokers. We must not overlook the fact that many of the young gentlemen who smoke in America have other unhealthy habits, and their mode of living is often demoralizing. The same applies to many British boy smokers. Well-trained lads suffer less, and being well-trained are prevented from smoking to excess, if at all.—*Brit. Med. Journal*.

THE REDUCTION OF THE GENERAL DEATH-RATE.

There is a belief that the death-rate is reduced by modern civilization. It is interesting to be able to secure positive observations supporting this belief. It is well known that in England and Wales such observations have been made extending over a term of years. Earr's first life tables were based upon the mortality in 1838 to 1854 in England and Wales. Comparing this with the last life table, and we find that by the old table the mean life-time of males was thirty-nine and ninety-one one-hundredths years, while by the new table it is forty-one and thirty-five one-hundredths years, a gain of about a year and a half upon the length of life of each male. Hence a million males would live one million four hundred and thirty-nine thousand, *plus*, more years than during the period of the old table. The expectation of life at birth of females has been augmented by two and seventy-seven one-hundredths years. Two millions of population will thus live more than four millions more years than they would during the period covered by the old table; or sixty millions of people would live one hundred and twenty millions more years than they would have done at the beginning of the present century. Further, the gain in these lives is mainly between the ages of 25 and 65, the most valuable portion of life. According to Earr, the minimum value of each life is about eight hundred dollars. It is easy to see that the momentary gain from this reduction of death-rate has been enormous.—*American Lancet*.

CABLEGRAM RECEIVED DECEMBER 15, 1890.

A long cablegram received from Dr. Guiteras may be summarized as follows:

"A greater degree of caution is being observed, especially as to the selection of cases of pulmonary phthisis subjected to the lymph treatment. The results in this disease at least, are as yet inconclusive. Many cases are not decidedly improved. There is some risk of complication. Both pneumonia and meningitis have been observed. The general situation may be summed up by stating that a spirit of caution prevails in Berlin to-day."

WILLIAM PEPPER,
JAMES TYSON,
J. WILLIAM WHITE,
JOHN H. MUSSER,

University Tuberculosis Commission.
—*University Medical Magazine*.

DOMESTIC CORRESPONDENCE.

Hypnotism.

To the Editor:—I think you have done the profession a good service in bringing before it the excellent paper by Dr. Lackersteen on "Hypnotism," with the comments upon it by the able gentlemen who spoke at its conclusion. I regard as in the right line the suggestion of Dr. Lackersteen that a judicious committee be created to examine into the uses of the hypnotic state, together with its abuses also, and give public, authoritative protests against popular exhibitions of it by wandering mountebanks. As a popular affair the whole thing, in my judgment, should be stamped out as dangerous and destructive.

I had occasion, some years ago, to attend some of the exhibitions given by Carpenter in Tremont Temple. He had found in his travels several facile subjects, which he took from place to place, and with whom he did his most marvelous feats. His chief dupe was a tall, sandy-complexioned man, who was arranged to take his seat in the back part of the audience, and on a look from Carpenter would instantly lose self-control, and go over the backs of the seats before him and clamber upon the platform. Of course this made a sensation to start with.

Now it happened that this man was married, and his wife gave birth to a pair of twins in my presence as consulting physician. She, like him, was very nervous, and though there was nothing unusual in the confinement, had to crown all by a subsequent eclampsia, which was relieved by a little chloral and chloroform. One of the children, the smaller, appeared fairly well, while the other was fretful and cried most of the time, and died after a few weeks. When the wife was being confined the husband acted like a crazy man. He came into the room, but soon left and went down stairs, where I found him lying on his back on the lounge, writhing, kicking and pulling his hair, and moaning at a great rate. His face was red and his eyes suffused with tears. Now all this was without reason, unless we assume that the sight of his laboring wife hypnotized him into labor himself. Surely, in this case, the mountain labored without the appearance of a mouse even. I assured him that his wife was all right and he the father of a pair of boys, and got him out of his "symptoms." After this I had quite a long talk with him, only to be impressed with the sad destruction of mind which the habit of hypnotism is capable of producing, assuming that this man had any mind to start with. Frequently do visions of this almost demented creature rise to my mind, impressing me more and more with the delusions and damage of the dangerous habit, for either it reduces wise men to fools or makes fools the puppets for the sport of the more intelligent. In

either case, due professional dignity should frown on public exhibitions of strong wills making sport over human weakness. Respectfully,

E. CHENERY, M.D.

Boston, November 24, 1890.

Dr. Josephus Craft, of Cleveland, O., Claims to have Discovered the Identical Lymph of Dr. Koch.

To the Editor:—Through some experimental research that I was led to make about two years ago, in reference to a bacillicide, certain peculiar results were attained which surprised me.

Not being a man of wealth or leisure, nor having a Government appropriation to keep the wolf from the door, I was obliged to drop it for the time—thinking that perhaps I might take it up some time in the future and push it to a satisfactory completion if possible, with my limited means for doing such work.

Hearing of Dr. Koch's announcement of the discovery of a substance that would cure consumption, lupus, and other allied maladies, I betthought me that perhaps it would be well to follow up the experiments already begun.

When I read of the effects of his discovery, it impressed me forcibly that it was in the same field in which I had been looking. I thought that perhaps I might discover what would produce the same happy result. I immediately began on the same base I had left, "cutting and trying," all the time working with the same preconceived objective point in view. I have reached that point. Those results I have succeeded in establishing. Now I am not unmindful of the gravity of the astounding announcement I am about to make, especially if it be not true, when I say that I have discovered the identical lymph of Dr. Koch.

I have put the lymph to the crucial test upon rabbits and guinea pigs, and finally upon myself, with effects identical with those described by Dr. Koch. I find it to be a tremendously potent agent; so that .01 of a cubic centimetre, or even less, of what I denominate a 2 per cent. dilution, produces its characteristic effect.

I shall have to rely upon what I have gotten in a physiological state as yet, for I have not applied it to consumption, etc. Dr. Koch, in describing the effects of his lymph upon himself, says:

I injected .025 of a cubic centimetre in the upper arm. Three or four hours after the injection had been made, there was experienced a contraction of the limb, and at the same time there was a desire to cough, with dyspnoea. These symptoms increased rapidly, and four or five hours thereafter I experienced an unusually violent rigor, the shivering lasting nearly an hour, and was accompanied by nausea and vomiting. Temperature rose to 105.2°. After twelve hours the symptoms began to abate, and the temperature fell, and the following day became normal.

The heaviness of the limb and the lassitude continued for some days, during which time the arm into which the injection had been made continued painful and red.

The following is the effect of my lymph upon myself. I injected .50 of a cubic centimetre in the outside of my thigh at 9:45 P.M., retiring immediately. At 2 A.M. I woke with considerable dyspnoea and a desire to cough frequently. Took my temperature and found it 97°, pulse 84. I again retired, but could not sleep from nervous excitement, perhaps partly due to finding the effect of Dr. Koch's remedy "on time" in my own case. (Some of Dr. Koch's cases which have been treated since he was, experience a lowering of temperature below normal the first few hours.) After rising in the morning I found my temperature normal, pulse 86, dyspnoea and cough still remaining. At 9 A.M. I felt well enough to start out and see my patients.

Soon after starting I began feeling rigors with considerable general malaise. I continued my work until 1:30 P.M., when I was having decided chills, temperature 105.5°, pulse 104, some dyspnoea still remaining, with twinges of wandering pains, and waves of nausea coming and going, but no vomiting. At 5 P.M. temperature 102°, pulse 104, dyspnoea not all gone, occasional nausea, slight wandering pains throughout the body, point of injection getting red and somewhat painful. Retired early but felt nervous, with general weakness. Next morning no nausea, fair appetite, dyspnoea gone.

I am a healthy man, but have had in one of my nostrils for years a small epithelial sore, crusting over and exfoliating in a few days, to repeat the crust and again come off. This little sore became inflamed and tender, but has now dried up and no crust reforming. Now, this is my case from the effects of my lymph. The foregoing was Dr. Koch's case from the effect of his lymph.

My lymph is of a syrupy consistence, and in its more concentrated form slightly brownish in color, but in the diluted form for use is slightly smoky-looking, but transparent. Dr. Koch is using a much stronger solution than I, for he used only .025 of a cubic centimetre, while my largest injection was .50 of a cubic centimetre; the effects upon each of us, as can readily be seen, were very analogous.

In order to have the verdict of the medical fraternity upon this lymph, which I am sure is Dr. Koch's, I will immediately send samples for testing to prominent physicians in New York, Philadelphia, Cincinnati, Chicago, St. Louis and St. Paul.

By following Koch's directions, with the dosage of my lymph, you will realize just what you would with his lymph in his dosage.

Work will immediately be commenced here in the different hospitals, in conjunction with the physicians of this city. As soon as possible arrangements will be made for treating the sick generally. Respectfully,

JOSEPHUS CRAFT, M.D.

64 Streator Ave., Cleveland, O.

BOOK REVIEWS.

AMERICAN BULLETIN VISITING LIST.—This little volume is in some respects quite original, and we invite inspection, believing that many physicians will incline to the use of a book thus arranged. Its tables are ample and the new remedies are fully represented. F. A. Davis & Co., Publishers. 1231 Filbert Street, Philadelphia.

THE PHYSICIAN'S ALL REQUISITE TIME AND LABOR-*SAVING ACCOUNT BOOK.*—F. A. Davis & Co., Philadelphia. This is a combination of an account book and ledger—is at once condensed in arrangement and simple in its method of presenting the items of each and every account at a single glance. We commend the work in every thing except its name.

MISCELLANY.

SCIENTIFIC STUDY OF INEBRIETY.—The American Association for the Study and Cure of Inebriety will hold a series of monthly meetings, in the hall of the New York Academy of Medicine, for the medical study of Alcohol and Opium Inebriety. Special phases of this subject will be discussed each evening in papers by leading authorities, followed by remarks and reports. The first meeting was held on December 10, "The Relation of Life Insurance to Alcohol and Opium Inebriety," was presented. January 7, 1891, "Alcohol: its Physiological and Pathological Action, and its Use and Abuse in Medicine," will be discussed. "Inebriety, its Etiology and History," will be the topic for February 18. "The Curability of Inebriety, its Treatment and Relation to other Diseases," will be the subject for March 18. In April, "The Medico-legal Relations of Inebriety," will be studied. It is the purpose of this Association to confine these discussions entirely to the medical and scientific side, with the view of reaching some general conclusions from which more accurate researches can be made.

A cordial invitation is extended to all medical and scientific students to be present and join in this special study of the "Drink Disease and its Problems." Dr. T. D. Crothers, of Hartford, Conn., is the Secretary.

PROF. NICHOLAS SENN has resigned the professorship of surgery and surgical pathology of Rush Medical College, Chicago. The resignation was accepted at a meeting of the faculty previous to the college memorial exercises at Central Music Hall.

LETTERS RECEIVED.

Dr. Wm. Flynn, Marion, Ind.; Dr. C. J. March, For-
dyce, Ark.; J. H. Chambers & Co., Dios Chemical Co.,
St. Louis, Mo.; Dr. W. C. Briscoe, Dr. C. R. Greenley,
Dr. D. S. Lamb, Dr. C. W. Richardson, Washington,
D. C.; Dr. J. C. Gilbert, Wessington, S. Dak.; Dr.
Thomas Elliott, Worth, Pa.; Dr. L. Reynolds, Horton,
Kansas; Howard M. Dubois, Wm. J. Dornan, Phila-
delphia; Dr. Paul Paquin, Columbia, Mo.; Dr. C. R.
Holmes, Cincinnati, O.; Dr. Wm. Patch, Ellsworth, Ill.;
Dr. Mary M. Cutler, Pomeroy, O.; New York & Chicago
Chemical Co., Lehn & Pink, New York City.

List of Permanent Members of the American Medical Association.

Abel, O. E., Winchester, Ind.	1889	Asdale, Wm. Jas., Pittsburg, Pa.	1860	Barnes, W. T., Fredericksburg, O.	1883
Abel, S. V., Cincinnati, O.	1890	Ash, Henry St. Clair, Philadelphia, Pa.	1890	Barr, Geo. W., Titusville, Pa.	1868
Abbott, Samuel W., Wakefield, Mass.	1889	Ashby, T. A., Baltimore, Md.	1884	Barrett, J. E., Wooster, O.	1883
Abernathy, Chas. A., Pulaski, Tenn.	1890	Ashley, W. H., Shelburne Falls, Mass.	1889	Barrett, W. M., Onargo, Ill.	1887
Abrams, A. E., Hartford, Conn.	1889	Ashton, Lawrence, Dallas, Texas.	1881	Barrett, Wm. M., Boston, Mass.	1880
Acker, Geo. N., Washington, D. C.	1881	Atchison, T., Nashville, Tenn.	1890	Barrow, David, Lexington, Ky.	1890
Adair, L. J., Anamosa, Iowa.	1883	Atcheson, W. A., Nashville, Tenn.	1890	Bartholow, Roberts, Philadelphia, Pa.	1888
Adams, B. F. D., Colorado Sp'gs, Colo.	1876	Atkeson, C. L. C., Notasulga, Ala.	1889	Bartleson, S. P., Clifton Heights, Pa.	1883
Adams, Chas. W., Kansas City, Mo.	1887	Atkinson, Isaac E., Baltimore, Md.	1889	Bartlett, A. T., Virden, Ill.	1890
Adams, D. S., Manchester, N. H.	1889	Atkinson, Wm. B., Philadelphia, Pa.	1889	Bartlett, C. K., St. Peter's, Minn.	1883
Adams, J. F. A., Pittsfield, Mass.	1881	Atwood, LeGrand, St. Louis, Mo.	1884	Bartlett, John, Chicago, Ill.	1887
Adams, J. R., Petersburg, Ind.	1879	Auld, John M., Keota, Iowa.	1887	Barton, James M., Philadelphia, Pa.	1878
Adams, Samuel S., Washington, D. C.	1881	Aulde, John, Philadelphia, Pa.	1889	Barton, P. H., Danville, Ill.	1883
Adams, W. A., Fort Worth, Texas.	1887	Austin, Herman W., U. S. Marine-Hospital Service.	1881	Barton, T. J., Zanesville, O.	1883
Adams, Z. B., Framingham, Mass.	1880	Austin, W. G., New Orleans, La.	1885	Bascom, F. S., Salt Lake City, Utah.	1889
Ader, Henry, Somerset, Ind.	1873	Avery, John, Greenville, Mich.	1885	Bass, William, Lowell, Mass.	1878
Adolphus, Philip, Chicago, Ill.	1884	Ayer, W. L., Oswego, N. Y.	1889	Bassett, Moses F., Quincy, Ill.	1864
Agard, Aurelius H., Oakland, Cal.	1863	Ayers, J. H., Urbana, O.	1880	Bates, Xyris T., Poughkeepsie, N. Y.	1885
Agnew, D. Hayes, Philadelphia, Pa.	1872	Ayers, Samuel, Pittsburgh, Pa.	1884	Batman, W. F., Ladoga, Ind.	1890
Aikman, Robert, Fort Scott, Kan.	1884	Ayres, Stephen C., Cincinnati, O.	1888	Batten, J. M., Pittsburgh, Pa.	1876
Ainey, D. C., New Milford, Pa.	1884			Batley, Robert, Rome, Ga.	1875
Ainsworth, H. R., Addison, N. Y.	1879			Battle, William, Pulaski, Tenn.	1890
Akins, Wm. T., Chicago, Ill.	1887			Battles, W. S., Shreve, Ohio.	1872
Albright, Joseph, Grand Rapids, Mich.	1888	Babcock, R. H., Chicago, Ill.	1887	Baxter, Geo. A., Chattanooga, Tenn.	1890
Alden, Charles, U. S. Army.	1880	Bachman, N. E., Stanton, Mich.	1883	Baxter, Henry F., Philadelphia, Pa.	1880
Alderson, J. J., Chicago, Ill.	1887	Bacon, C. P., Evansville, Ind.	1874	Baxter, J. H., U. S. Army, Washington, D. C.	1878
Aldrich, Walton H., Marlboro, N. H.	1889	Bacon, Charles Giles, Fulton, N. Y.	1885	Bayles, George, Orange, N. J.	1884
Alexander, C., Eau Claire, Wis.	1877	Baer, B. F., Philadelphia, Pa.	1885	Bayley, Russell, New Dorp, N. Y.	1889
Alford, Judson B., Grand Rapids, O.	1888	Baguley, H. B., Wheeling, W. Va.	1883	Bayne, John W., Washington, D. C.	1886
Allee, Wm. S., Oleon, Mo.	1886	Bailey, Geo. D., Spiceland, Ind.	1888	Beach, J. N., West Jefferson, O.	1883
Allen, Bradford, Nashua, N. H.	1889	Bailey, Jonathan R., Olmstead, Ky.	1858	Beall, Elias J., Fort Worth, Texas.	1884
Allen, Charles L., Rutland, Vt.	1853	Bailey, J. W., Gainesville, Ga.	1878	Bean, J. V., Fairfield, Iowa.	1888
Allen, Dudley, Oberlin, Ohio.	1887	Bailey, Thos. P., Georgetown, S. C.	1884	Beard, F. W., Vincennes, Ind.	1883
Allen, Dudley P., Cleveland, O.	1888	Bailey, William, Louisville, Ky.	1886	Beardsley, C. E., Ottawa, O.	1874
Allen, Ezra P., Athens, Pa.	1860	Bailhache, Preston H., U. S. Marine-Hospital Service.	1876	Beasley, Geo. F., Lafayette, Ind.	1878
Allen, George M., Cincinnati, O.	1888	Bain, F. D., Kenton, O.	1884	Beaumont, C. W., Clarksville, Tenn.	1890
Allen, Harlan P., Columbus, O.	1888	Bain, W. H., Farmingdale, Ill.	1890	Becknell, Irvin J., Milford, Ind.	1884
Allen, Jesse W., Port Royal, Tenn.	1890	Baker, Bascom, Parsons, W. Va.	1884	Bediet, J. J., Kasson, Minn.	1877
Allen, J. M., Liberty, Mo.	1886	Baker, A., Rufus, Cleveland, O.	1888	Beecher, A. C. W., Philadelphia, Pa.	1889
Allen, Thos. J., Shreveport, La.	1885	Baker, E. L., Indianola, Iowa.	1882	Beeler, George, Clinton, Ky.	1885
Allen, W. A., Donnellson, Ill.	1886	Baker, G. W., Brooklyn, N. Y.	1885	Beeman, P., Sidney, O.	1883
Alley, E. H., Toledo, O.	1876	Baker, Henry B., Lansing, Mich.	1874	Beggs, G. W., Sioux City, Iowa.	1882
Allison, W. R., Good Hope, Ill.	1888	Baker, John F., St. Paul, Minn.	1882	Behrens, B. M., Chicago, Ill.	1888
Allport, W. W., Chicago, Ill.	1881	Baker, Joseph H., Stockwell, Ind.	1886	Belden, A. C., Akron, O.	1883
Alvord, A. W., Battle Creek, Mich.	1882	Baker, J. W. H., Davenport, Iowa.	1888	Belknap, S., Niles, Mich.	1886
Ames John G., Chicago, Ill.	1887	Baker, L. H., Payson, Ill.	1873	Bell, A. Nelson, Brooklyn, N. Y.	1860
Anders, James M., Philadelphia, Pa.	1884	Baker, N. D., Martinsburg, W. Va.	1881	Bell, Aurelius E., Zanesville, O.	1888
Anderson, A. B., Pawnee City, Neb.	1886	Baldwin, A. E., Chicago, Ill.	1882	Bell, F. M., Kelso, Washington	1890
Anderson, B. C., Beardstown, Ill.	1890	Baldwin, E. A., Chicago, Ill.	1886	Bell, G., Indianapolis, Ind.	1890
Anderson, James H., New York, N. Y.	1884	Baldwin, H. R., New Brunswick, N. J.	1880	Bell, G. F., Williamsport, Pa.	1890
Anderson, J. W., Ardmore, Pa.	1889	Baldwin, L. K., Philadelphia, Pa.	1884	Bell, James, Olathe, Kans.	1882
Anderson, Turner, Louisville, Ky.	1888	Baldwin, Mary E., Newport, R. I.	1889	Bell, John, Benton Harbor, Mich.	1874
Anderson, Wm., Indiana, Pa.	1868	Baldwin, W. H., Sacramento, Cal.	1887	Bell, Samuel, Beloit, Wis.	1880
Anderson, Winslow, San Francisco, Cal.	1890	Baldy, J. M., Philadelphia, Pa.	1889	Bell, Wm. H., Logansport, Ind.	1874
Anderton, Wm. B., New York, N. Y.	1883	Ball, D. R., Nelson, Neb.	1884	Bell, Wm. Herbert, Cincinnati, O.	1888
Andress, T. H., Sparta, N. J.	1889	Ball, James T., Judson, Ind.	1888	Belt, Charles B., Boston, Mass.	1888
Andrew, Geo. L., Laporte, Ind.	1877	Ballou, J. H., Haven, Kans.	1886	Belt, William H., Kenton, O.	1888
Andrews, Edmund, Chicago, Ill.	1851	Balleray, G. H., Paterson, N. J.	1889	Benham, J. C., Hudson, N. Y.	1884
Andrews, Judson B., Buffalo, N. Y.	1884	Balmer, A. F., Brookville, Pa.	1883	Benjamin, Dowling, Camden, N. J.	1884
Andrews, J. W., Mankato, Minn.	1887	Bandy, R. W., Gleason, Tenn.	1890	Bennett, Alice, Norristown, Pa.	1884
Andrews, R. R., Cambridge, Mass.	1889	Bane, W. C., Canonsburg, Pa.	1889	Bennett, E. O., Wayne, Mich.	1884
Andrews, R. F., Gardner, Mass.	1878	Bangs, L. B., New York, N. Y.	1880	Bennett, I. E., Plano, Ill.	1883
Andrews, W. H., Springfield, Mass.	1890	Banker, A. J., Columbus, Ind.	1886	Bennett, J. H., Wauseon, O.	1876
Archer, W. A., Houston, Texas.	1885	Banks, Gertrude, Detroit, Mich.	1880	Bennett, Thos. L., Kansas City, Mo.	1889
Archibald, O. W., Jamestown, N. Dak.	1878	Banks, D. F., Jordonia, Tenn.	1890	Bennett, T. W., Jeffersonville, N. Y.	1885
Archinard, P. E., New Orleans, La.	1885	Barber, R. D., South Riverside, Cal.	1882	Bennitt, John, Cleveland, O.	1874
Ard, Frank C., Pomeroy, O.	1889	Barber, T. L., Charleston, W. Va.	1888	Bentley, E., Little Rock, Ark.	1889
Armitage, D. R., Muncie, Ind.	1881	Barber, W. L., Waterbury, Conn.	1884	Bergen, A. C., Sioux City, Iowa.	1889
Armstrong, C., Carrollton, Ill.	1886	Barbour, Clement C., Newport, Ky.	1888	Berghoff, John T., St. Joseph, Mo.	1886
Armstrong, L. G., Boscobel, Wis.	1876	Barger, R. N., Hopedale, Ill.	1884	Berkebile, J. K., Millstadt, Ill.	1879
Armstrong, S. T., New York.	1885	Barker, A., Bertrand, Mo.	1886	Berlin, J. O., Bath, Pa.	1881
Armstrong, W. S., Atlanta, Ga.	1870	Barker, C. F., Newport, R. I.	1889	Berntheizel, G. W., Columbia, Pa.	1888
Arnold, E. S. F., Newport, R. I.	1863	Barker, H. H., Washington, D. C.	1887	Berry, A. K., Chillicothe, Iowa.	1887
Arnold, John, Rushville, Ind.	1875	Barkley, T. V. C., Chattanooga, Tenn.	1890	Berry, J. G., Chicago, Ill.	1887
Arnold, W. W., Colorado Springs, Colo.	1883	Barlow, L. N., Chicago, Ill.	1887	Berry, J. J., Portsmouth, N. H.	1887
Arrington, John J., Nashville Tenn.	1890	Barnes, H. B., Ionia, Mich.	1851	Berteling, John B., South Bend, Ind.	1888
Arthur, C. S., Portland, Ind.	1883	Barnes, Ira N., Decatur, Ill.	1887	Besharian, John H., Chicago, Ill.	1884
		Barnes, Lewis, Oxford, Conn.	1883	Beshoar, Michael, Trinidad, Colo.	1874

Bessey, J. Martin, Toledo, O.	1888	Brainard, H. G., Los Angeles, Cal.	1885	Bumstead, J. E., Dundee, Ill.	1887
Best, John R., Arlington Heights, Ill.	1887	Brainard, I. M., Alma, Mich.	1890	Bunce, W. J., Oberlin, O.	1878
Bettman, Boerne, Chicago, Ill.	1887	Braman, F. N., New London, Conn.	1884	Bundy, A. D., St. Ausgar, Iowa.	1886
Betton, G. W., Tallahassee, Fla.	1876	Bramble, D. D., Cincinnati, O.	1886	Bundy, D. B., Middletown, Ohio.	1888
Bevan, C. F., Baltimore, Md.	1884	Branham, J. B., Baltimore, Md.	1890	Bunn, James W., West Union, O.	1884
Bibber, G. M., Wichita, Kans.	1888	Brashear, B. E., Cleveland, O.	1890	Burchard, T. H., New York, N. Y.	1880
Biddle, J., Monmouth, Ill.	1886	Brayton, C. E., Stouington, Conn.	1889	Burd, Edwin, Lisbon, Iowa.	1887
Biedler, H. H., Baltimore, Md.	1889	Brayton, F. W., Carey, O.	1883	Burge, J. H. Hobart, Brooklyn, N. Y.	1887
Bigelow, Horatio R., Washington, D. C.	1884	Bready, John E., Dubuque, Iowa.	1884	Burge, W. J., Pawtucket, R. I.	1880
Biggs, H. M., New York, N. Y.	1884	Breaky, W. F., Ann Arbor, Mich.	1877	Burke, G. W., Newcastle, Ind.	1882
Bill, C. H., Bridgeport, Conn.	1883	Breinig, Peter B., Bethlehem, Pa.	1865	Burke, John L., LaCade, Mo.	1887
Billin, D. H., Shreveport, La.	1885	Bremer, L., St. Louis, Mo.	1886	Burket, C. W., Warsaw, Ind.	1887
Billings, Frank, Chicago, Ill.	1884	Brendle, Geo. F., Mahanoy City, Pa.	1884	Burnham, A. F., Ashland, Ill.	1886
Billings, John Shaw, U. S. A., Wash- ington, D. C.	1868	Breysacher, A. L., Little Rock, Ark.	1873	Burnham, H. B., Manchester, N. H.	1880
Billings, Lucius F., Barre, Mass.	1889	Brice, R. S., Keota, Iowa.	1884	Burnett, G. W., Greenville, O.	1888
Birch, Thomas J., Fort Carbon, Pa.	1883	Bricker, W. R., Shelby, O.	1883	Burnett, J., Scranton, Pa.	1889
Birdsall, Gilbert, N. Brookfield, N. Y.	1880	Bridenstine, S. J., Madison, Neb.	1883	Burns, Robert Bruce, Philadelphia, Pa.	1889
Birney, Clavus C., Nora Springs, Iowa	1882	Bridge, Norman, Chicago, Ill.	1886	Burrall, F. A., New York, N. Y.	1872
Bishop, Henry M., S. Brooklyn, N. Y.	1882	Bridges, J. N., Reddysville, Tenn.	1890	Burrell, D. R., Canandaigua, N. Y.	1878
Bishop, S. P., Delta, O.	1885	Briggs, A. B., Ashaway, R. I.	1889	Burrell, J. L. A., Williamsport, Pa.	1890
Bishop, S. S., Chicago, Ill.	1885	Briggs, A. H., Buffalo, N. Y.	1884	Burroughs, R. Berrien, Jacksonville, Fla.	1886
Bishop, Timothy H., New Haven, Conn.	1847	Briggs, C. S., Nashville, Tenn.	1890	Burroughs, S. R., Raymond, Texas.	1885
Bishop, W. T., Harrisburg, Pa.	1884	Briggs, Edward C., Boston, Mass.	1883	Burtless, W. E., Hickory, N. C.	1884
Bittinger, J. H., Hanover, Pa.	1881	Briggs, Eldorado, Wilmington, O.	1888	Burton, Geo. W., Mitchell, Ind.	1874
Bitz, L. B., Blairsville, Ind.	1878	Briggs, Thos. H., Battle Creek, Mich.	1888	Burts, W. Parton, Fort Worth, Texas.	1885
Bixby, George Holmes, New Bedford, Mass.	1872	Briggs, William Thompson, Nashville, Tenn.	1869	Burwash, T. N., Plainview, Ill.	1886
Blachly, O. L., Sparta, Pa.	1880	Briggs, Waldo, St. Louis, Mo.	1890	Burwell, G. N., Buffalo, N. Y.	1883
Black, Charles, San Francisco, Cal.	1888	Brigham, B. A., Chicago, Ill.	1887	Busay, Samuel C., Washington, D. C.	1870
Black, John E., Memphis, Tenn.	1885	Brigham, O. S., Toledo, O.	1881	Bush, John C. F., Fort Wahoo, Neb.	1888
Blackmer, F. A., Albert Lea, Minn.	1886	Brinkerhoff, David H., Fremont, O.	1888	Bush, J., Foster, Boston, Mass.	1884
Blair, A. O., Beulah, Kans.	1886	Brinton, John H., Philadelphia, Pa.	1880	Bush, Lewis F., Wilmington, Del.	1847
Blair, B. H., Lebanon, O.	1886	Briscoe, W. C., Washington, D. C.	1884	Butin, John L., Dorchester, Neb.	1886
Blair, H. W., Sheffield, Ala.	1886	Brock, Luther S., Morgantown, W. Va.	1888	Butler, F. A., Harvard, Neb.	1890
Blair, James F., Linwood, O.	1884	Brockett, A. J., Cleveland, O.	1876	Butt, A. L., Adairsville, N. Y.	1890
Blaisdell, I. C., Wilmore, Pa.	1883	Brockhausen, B. E., Lansing, Iowa	1882	Butt, Richard L., Midway, Ala.	1879
Blake, D. B., Cuero, Texas.	1880	Broffett, Jas. H., Paw Paw, Ill.	1880	Buttermore, Smith, Connelville, Pa.	1874
Blakeman, J. L., Little Rock, Ark.	1890	Bromwell, J. R., Washington, D. C.	1884	Buttner, Adolph, Fifeild, Wis.	1890
Blakeslee, Edwin, Anamosa, Iowa.	1873	Bronson, Ira T., Sedalia, Mo.	1887	Buzzard, John, Bangor, Pa.	1888
Blanchard, L., Edgewood, Iowa.	1883	Brooke, G. W., Ellsworth, O.	1883	Byall, H. M., Kunkle, O.	1889
Bland, Jasper J., Houma, La.	1889	Brooks, D. F., St. Paul, Minn.	1876	Byers, A. R., Petersburg, Ind.	1890
Blanks, J. H., Nashville, Tenn.	1880	Brooks, H. J., Elgin, Ill.	1890	Byford, Henry T., Chicago, Ill.	1874
Bleyer, J. Mount, New York, N. Y.	1889	Brooks, J. G., Paducah, Ky.	1882	Byrne, James F., Murfreesboro, Tenn.,	1885
Bliss, Lyman W., Saginaw, Mich.	1874	Brookings, D. J., Woodward, Iowa.	1885		
Blitz, Adolph, Indianapolis, Ind.	1888	Broome, G. W., St. Louis, Mo.	1886	Cable, J. Spencer, Ind.	1886
Block, Jacob, Kansas City, Mo.	1888	Brophy, T. W., Chicago, Ill.	1881	Cabot, A. T., Boston, Mass.	1889
Bloodgett, A. G. W. Brookfield, Mass.	1880	Brother, Ferd., St. Louis, Mo.	1880	Cadwalader, C. E., Philadelphia, Pa.	1887
Bloomfield, E. M., Peru, Ind.	1883	Browder, D. N., Sweetwater, Tenn.	1890	Cahill, T. M., New Haven, Conn.	1889
Blount, R. F., Washash, Ind.	1882	Brower, D. R., Chicago, Ill.	1877	Cain, J. S., Nashville, Tenn.	1890
Blumburg, A., Pittsburg, Pa.	1884	Brown, A. B., Waverly, Tenn.	1890	Caldwell, Charles E., Cincinnati, O.	1888
Blumenthal, Mark, New York, N. Y.	1880	Brown, C. B., Sycamore, Ill.	1887	Caldwell, F. H., Sanford, Fla.	1890
Boal, G. V., Borden, Pa.	1887	Brown, Chas. W., Washington, D. C.	1876	Caldwell, Groves, JAMES, Ala.	1889
Boal, Robert, Peoria, Ill.	1887	Brown, Hawkins, Hustonville, Ky.	1884	Caldwell, Jos. R., New Hamburg, Pa.	1887
Boarman, C. V., Washington, D. C.	1884	Brown, Henry B., Lincoln, Ill.	1888	Caldwell, Margaret, Waukesha, Wis.	1888
Bock, A. F., St. Louis, Mo.	1886	Brown, Henry M., Hillsboro, O.	1887	Caldwell, W. Fremont, O.	1890
Bodkin, D. G., Brooklyn, N. Y.	1876	Brown, H. W., Waterloo, Iowa.	1887	Caldwell, W. H., Lexington, Ky.	1890
Bogie, M. A., Kansas City, Mo.	1882	Brown, Isaac E., Detroit, Mich.	1887	Caldwell, W. S., Freeport, Ill.	1887
Boise, Eugene, Grand Rapids, Mich.	1882	Brown, J. A., Germantown, O.	1888	Calkins, Marshall, Springfield, Mass.	1866
Boisliniere, L. Charles, St. Louis, Mo.	1886	Brown, James L., Peoria, Ill.	1888	Callender, John H., Nashville, Tenn.	1887
Boker, Charles S., Philadelphia, Pa.	1864	Brown, J. W., Mottville, N. Y.	1880	Cameron, O. S., Cincinnati, O.	1888
Bombaugh, C. C., Baltimore, Md.	1884	Brown, Luther, Postville, Iowa.	1888	Camp, Erasmus T., Gadadsen, Ala.	1890
Bond, C. S., Richmond, Ind.	1887	Brown, N. W., Pittsburg, Pa.	1888	Campbell, Albert E., Clinton, Ill.	1888
Bond, James A., Kansas City, Mo.	1886	Brown, Tinsley, Hamilton, Mo.	1885	Campbell, E. R., Bellows Falls, Vt.	1880
Bond, L. L., Westside, Iowa.	1887	Brown, W. H., Gilbertville, Mass.	1887	Campbell, Henry F., Augusta, Ga.	1870
Bond, M. L., Louisville, Ky.	1888	Brownne, John Mills, U. S. Navy	1881	Campbell, J. F., Callao, Mo.	1886
Bond, R. C., Aurora, Ind.	1888	Brownfield, J. H., Fairmont, W. Va	1884	Campbell, J. V., Paxton, Ill.	1882
Bond, Y. H., St. Louis, Mo.	1886	Brucker, Chas. M., Tell City, Ind.	1888	Campbell, Michael, Knoxville, Tenn.	1889
Bondurant, A. A., Charleston, Mo.	1888	Bruchl, Gustavus, Cincinnati, O.	1871	Campbell, W. D., Marshalltown, Iowa.	1887
Bonnell, M. H., Lebanon, Ind.	1890	Brambaugh, A. B., Huntingdon, Pa.	1884	Campbell, W. W., Austin, Tenn.	1890
Bonner, M. H., Nashville, Tenn.	1880	Brumme, Carl, Detroit, Mich.	1874	Cantrell, J. Abbott, Philadelphia, Pa.	1889
Bontecou, Reed B., Troy, N. Y.	1853	Brundage, A. H., Xenia, O.	1883	Carhart, John W., Lampasas, Texas.	1884
Book, J. B., Detroit, Mich.	1873	Brundage, A. T., Harford, Pa.	1888	Carlia, P. V., Denver, Colo.	1890
Boor, W. A., Newcastle, Ind.	1887	Bruner, Charles K., Greenfield, Ind.	1888	Carmichael, J. W., Knoxville, Tenn.	1890
Booth, D. S., Belleville, Ill.	1876	Brunk, C. K., Tell City, Ind.	1890	Carmichael, Wm. A., Lowell, O.	1888
Borck, Edward, St. Louis, Mo.	1881	Brush, E. F., Mt. Vernon, N. Y.	1884	Carolin, Wm. T., Lowell, Mass.	1884
Borden, W. H., Milton, Wis.	1888	Brush, E. N., Philadelphia, Pa.	1884	Carpenter, A. E., Boonton, N. J.	1870
Bossert, Jacob, Washingtonville, O.	1884	Bryan, D. C., Indianapolis, Ind.	1887	Carpenter, H. W., Oneida, N. Y.	1885
Boswell, A. J., Fort Wayne, Ind.	1884	Bryan, J. H., Washington, D. C.	1889	Carpenter, James G., Stanford, Ky.	1888
Bosworth, F. H., New York, N. Y.	1884	Bryan, T. N., Indianapolis, Ind.	1890	Carpenter, John T., Pottsville, Pa.	1878
Bottom, M., Breckenridge, Mo.	1884	Bryant, DeWitt C., Omaha, Neb.	1890	Carpenter, Julia W., Cincinnati, O.	1880
Boucher, F. H., Marshalltown, Iowa.	1888	Bryant, J. D., New York, N. Y.	1886	Carpenter, Stephen F., St. Joseph, Mo.	1890
Boulware, T. C., Butler, Mo.	1885	Bryant, J. P., St. Louis, Mo.	1887	Carriger, J. S., Knoxville, Tenn.	1888
Bourland, O. M., Van Buren, Ark.	1885	Buchanan, J. J., Allegheny, Pa.	1887	Carrington, C., Farmington, Conn.	1872
Bowditch, Henry I., Boston, Mass.	1848	Bucher, I. Ref., Lebanon, Pa.	1884	Carrington, F. M., U. S. M-Hospital Service	1886
Bowen, Asa B., Maquoketa, Iowa.	1876	Buck, E. J., Plattville, Wis.	1876		
Boyce, C. C., Abeline, Texas.	1885	Buck, H. E., Springfield, Wis.	1883	Carroll, A. L., New York, N. Y.	1889
Boyd, B. H., Lafayette, Ind.	1890	Buckham, J. N., Flint, Mich.	1884	Carson, James M., Iowa.	1884
Boyd, F., Paducah, Ky.	1880	Buckham, T. R., Flint, Mich.	1887	Carson, Lewis O., Trader's Point, Ind.	1884
Boyd, James P., Albany, N. Y.	1886	Buckingham, H. B., Clayton, N. J.	1884	Carson, N. E., St. Louis, Mo.	1886
Boyd, John M., Knoxville, Tenn.	1837	Buckingham, John M., Springfield, O.	1889	Carstens, J. Henry, Detroit, Mich.	1876
Boylan, Joseph E., Cincinnati, O.	1888	Buckley, H. N., Delhi, N. Y.	1889	Carter, Geo. W., Marshalltown, Iowa.	1882
Boys, Wm., Portland, Ore.	1882	Bucklin, G. W., Harmony, Ind.	1884	Carter, J. M. G., Waukegan, Ill.	1882
Bozeman, Nathan, New York, N. Y.	1884	Buckner, James H., Cincinnati, O.	1864	Carter, J. O., Lincoln, Neb.	1882
Brackett, A. B., Wakefield, Neb.	1884	Bucknum, A. M., Denver, Colo.	1877	Carter, K. H., Bordenham, Tenn.	1890
Bradford, Edwin H., Boston, Mass.	1888	Buechner, W. L., Youngstown, O.	1882	Cartwright, H. F., Bowling Green, Ky.	1890
Bradley, Clarence A., Beatrice, Neb.	1890	Bugher, C. E., Caldwell, O.	1890	Carville, H. D. W., Manchester, N. H.	1889
Bradley, C. C., Manchester, Iowa.	1890	Buist, J. R., Nashville, Tenn.	1890	Cary, Frank, Chicago, Ill.	1887
Bradley, M. L., Sandersville, Tenn.	1890	Bulkeley, J. W., Washington, D. C.	1878	Casal, Francis M., Santa Barbara, Cal.	1880
Brady, John, Grand Rapids, Mich.	1874	Bullard, Gates B., St. Johnsbury, Vt.	1889	Case, A. G., Denver, Colo.	1883
Brainard, B. F., Kansas City, Mo.	1890	Bullard, W. L., Columbus, Ga.	1890	Case, H. R., Grand Blanc, Mich.	1884
Brainard, D. S., Stacyville, Iowa.	1882	Bullard, W. N., Boston, Mass.	1883	Casebeer, J. B., Auburn, Ind.	1877

Cass, John, Hamilton, O.	1883	Cole, W. C., Attica, Ind.	1880	Creveling, J. P., Auburn, N. Y.	1890
Cass, J. W., Batesville, Ark.	1886	Cole, W. C., Jacksonville, Ill.	1886	Criley, B. H., Dallas Centre, Iowa	1878
Cassett, Massillon, Cincinnati, O.	1888	Cole, W. W., Allegheny, Pa.	1886	Crockett, S. S., Nashville, Tenn.	1890
Casselberry, W. R., Chicago, Ill.	1887	Coleman, A., Logansport, Ind.	1876	Croft, T. G., Aiken, S. C.	1870
Castle, F. E., Waterbury, Conn.	1880	Coleman, B. L., Lexington, Ky.	1879	Cronyn, John, Buffalo, N. Y.	1878
Caston, Wm., Spokane Falls, Wash.	1885	Coleman, J. S., Augusta, Ga.	1880	Crook, J. A., Jackson, Tenn.	1855
Cathcart, C. P., Kansas City, Mo.	1887	Coleman, William W., Mt. Washington, Ky.	1888	Cross, B. F., Decatur, Ala.	1890
Catlin, E. P., Rockford, Ill.	1884			Crossfield, F. S., Hartford, Conn.	1889
Catlin, G. E., Lake Geneva, Wis.	1880			Crowthwaite, G. W., Florence, Tenn.	1890
Catlin, S., Tecumseh, Mich.	1889			Crothers, T. D., Hartford, Conn.	1858
Cave, E. S., Mexico, Mo.	1886			Crouse, D. W., Waterloo, Iowa	1874
Cavaney, J., Milwaukee, Wis.	1887			Crow, A. M., Kansas City, Mo.	1857
Cawood, J. C., Knoxville, Tenn.	1888			Crow, J. T., Carrollton, Ill.	1866
Chafee, W. C., Huntington, Ind.	1887			Crummer, B. F., Omaha, Neb.	1882
Chailé, S. E., New Orleans, La.	1879			Crunk, W. F., Fayetteville, Tenn.	1890
Chamberlain, C. N., Lawrence, Mass.	1876			Crutch, T. P., Nashville, Tenn.	1890
Chamberlain, G. M., Chicago, Ill.	1877			Culbertson, J. C., Cincinnati, O.	1880
Chamberlain, M. L., Boston, Mass.	1886			Culbertson, R. H., Brazil, Ind.	1881
Chamberlain, J. E. M., Easton, Md.	1880			Culbertson, Scott, Moorfield, Ind.	1890
Chamberlayne, J. K., Utica, N. Y.	1884			Cullen, Frank C., Chicago, Ill.	1887
Chambers, John, Indianapolis, Ind.	1884			Cumming, Willis, Bridgeport, Conn.	1890
Chambers, John M., Independence, Ky.	1888			Cumple, J. J., Madison, Kan.	1883
Chambers, John W., Baltimore, Md.	1884			Cunningham, J. G., Kittanning, Pa.	1883
Champlin, A. Parker, Bay St. Louis, Mo.	1887			Cunningham, J. M., Bedford, Tenn.	1890
Chancellor, Eustathius, St. Louis, Mo.	1887			Cupples, George, San Antonio, Texas	1884
Chancellor, J. Edgar, University of Va.	1875			Curles, Wm., Fackee, Cal.	1884
Channing, Walter, Brookline, Mass.	1889			Curley, P. F., Newport, R. I.	1890
Chapin, C. V., Providence, R. I.	1889			Currie, Daniel A., Englewood, N. J.	1878
Chapin, E. P., Grass Lake, Mich.	1887			Curtin, Roland Gregg, Philadelphia, Pa.	1880
Chapman, A. W., East Prairie, Mo.	1890			Curtis, H. H., New York, N. Y.	1889
Chapman, G. H., Grand Crossing, Ill.	1887			Curtis, R. M., Union, Ill.	1890
Chapman, J. F., Bessemer, Ala.	1890			Curtis, W. E., McKenzie, Tenn.	1890
Chapman, W. C., Toledo, O.	1888			Curtman, Charles O., St. Louis, Mo.	1873
Charles, J. C., Chicago, Ill.	1887			Curwen, John, Warren, Pa.	1879
Charlton, Samuel H., Seymour, Ind.	1875			Cushing, E. W., Boston, Mass.	1886
Chase, J., Denver, Colo.	1882			Cushing, H. K., Cleveland, O.	1878
Chase, K. R., Eau Claire, Wis.	1890			Cushman, H., Blair, Neb.	1884
Chastain, E. N., Hume, Mo.	1887			Custer, I. E., Dayton, O.	1890
Cheatham, Richard, Nashville, Tenn.	1887			Cutter, Ephraim, New York, N. Y.	1871
Cheatham, Wm., Louisville, Ky.	1886			Cutter, John Ashburton, New York, N. Y.	1888
Chenery, Elisha, Boston, Mass.	1888				1885
Chenoweth, N. T., Windsor, Ind.	1886				
Chenoweth, W. J., Decatur, Ill.	1872				
Chestnut, J. H. W., Philadelphia, Pa.	1889				
Chew, John H., Chicago, Ill.	1877				
Chilton, E. Y., Howard, Minn.	1886				
Chilton, R. H., Dallas, Texas.	1883				
Chipman, M. M., San Jose, Cal.	1883				
Chisolm, J. J., Baltimore, Md.	1880				
Chitwood, John O., Connersville, Ind.	1888				
Christian, D., Springdale, Ark.	1885				
Christian, E. P., Wyandotte, Mich.	1880				
Christian, G. W., Burnet, Texas	1888				
Christopher, Walter S., Cincinnati, O.	1888				
Chritzman, H. G., Welsh Run, Pa.	1884				
Church, Rita B., Williamsport, Pa.	1884				
Clagett, Luther, S., Blairsville, Pa.	1884				
Clapp, Elmer F., Iowa City, Iowa	1884				
Clark, E. W., Grinnell, Iowa	1877				
Clark, John H., Mechanicsburg, O.	1880				
Clark, J. K., Denver, Colo.	1880				
Clark, L. A., Philadelphia, Pa.	1884				
Clark, M. S., Youngstown, O.	1883				
Clark, R. D., Akron, O.	1889				
Clarke, Almon, Sheboygan, Wis.	1882				
Clarke, Augustus P., Cambridgeport, Mass.	1880				
Clarke, F. H., Lexington, Ky.	1889				
Clarke, Rowan, Tyrone, Pa.	1880				
Clarke, W. E., Chicago, Ill.	1888				
Clarkson, J. A. C., Robertsdale, Pa.	1888				
Cleaver, J. H., Council Bluffs, Iowa	1884				
Cleaves, Royal L., Cherokee, Iowa	1890				
Clemens, J. M., Louisville, Ky.	1886				
Cleveland, Clement, New York, N. Y.	1889				
Cleveland, E. F., Dundee, Ill.	1880				
Cleveland, John L., Cincinnati, O.	1889				
Cliffe, Daniel B., Franklin, Tenn.	1880				
Cline, John B., Ferris's Mills, O.	1888				
Cline, L. C., Indianapolis, Ind.	1880				
Clouser, N. D., Hartford City, Ind.	1888				
Clover, Wm. M., Lamartine, Pa.	1889				
Cluness, Wm. Robert, Sacramento, Cal.	1871				
Cookley, J. B., Buffalo, N. Y.	1883				
Cobb, C. H., Boston, Mass.	1884				
Cobb, W. F., Mona, Iowa	1882				
Cochran, E. G., Jimulco, Mexico	1889				
Cochrane, Jerome, Mobile, Ala.	1884				
Cock, Thomas F., New York, N. Y.	1848				
Coffee, J. Turner, Steelville, Mo.	1878				
Coffman, Tasso R., Cincinnati, O.	1888				
Coffman, V. H., Omaha, Neb.	1882				
Cohen, J. Solis, Philadelphia, Pa.	1876				
Cohen, S. Solis, Philadelphia, Pa.	1889				
Coit, Henry L., Newark, N. J.	1889				
Coker, Wm. Wilson, Chicago, Ill.	1886				
Colburn, J. E., Chicago, Ill.	1887				
Colcord, J. W., Boston, Mass.	1889				
Cole, Fred, Garden City, Kans.	1876				
Cole, J. D., Newbern, Tenn.	1890				
Cole, N. B., Bloomington, Ill.	1884				
Cole, W. C., Attica, Ind.	1880				
Cole, W. C., Jacksonville, Ill.	1886				
Cole, W. W., Allegheny, Pa.	1886				
Coleman, A., Logansport, Ind.	1876				
Coleman, B. L., Lexington, Ky.	1879				
Coleman, J. S., Augusta, Ga.	1880				
Coleman, William W., Mt. Washington, Ky.	1888				
Coles, D. V., Winfield, Kans.	1887				
Coles, W. St. Louis, Mo.	1886				
Collamore, G. A., Toledo, O.	1883				
Collins, D. B., Madison, Wis.	1887				
Collins, G. L., Providence, R. I.	1889				
Collins, James, Philadelphia, Pa.	1868				
Collins, Milton L., S. Charleston, O.	1888				
Collins, Stacy B., New York, N. Y.	1883				
Colman, N. R., Columbus, O.	1888				
Colvin, Darwin, Clyde, N. Y.	1878				
Comegys, Cornelius G., Cincinnati, O.	1884				
Comings, B. M., New Britain, Conn.	1883				
Conklin, S. A., Canton, O.	1873				
Conklin, W. J., Dayton, O.	1878				
Conley, A. T., Cannon Falls, Minn.	1883				
Conn, G. P., Concord, N. H.	1880				
Connally, E. L., Atlanta, Ga.	1879				
Connell, J. G., Pittsburg, Pa.	1882				
Connell, J. P., Williamsport, Pa.	1890				
Conner, J. J., Pana, Ill.	1886				
Conner, P. S., Cincinnati, O.	1867				
Connor, Leartus, Detroit, Mich.	1874				
Contant, Richard B., Tarrytown, N. Y.	1885				
Conrad, Geo. R., New Vienna, O.	1888				
Conyngton, E. J., New Decatur, Ala.	1890				
Cook, C., David City, Neb.	1885				
Cook, Chas. D., Brooklyn, N. Y.	1886				
Cook, C. H., Natick, Mass.	1889				
Cook, C. E., Mendota, Ill.	1876				
Cook, Geo. F., Oxford, O.	1886				
Cood, Geo. J., Indianapolis, Ind.	1886				
Cook, Geo. W., Washington, D. C.	1887				
Cook, John C., Chicago, Ill.	1887				
Cook, S. D., Sigmour, Iowa	1887				
Cook, W. C., Lewisburg, Tenn.	1887				
Cook, W. V., Corydon, Ky.	1890				
Cooke, A. H., Chicago, Ill.	1884				
Cooke, Henry G., Elmwood, N. J.	1884				
Cooke, Theodore, Baltimore, Md.	1880				
Coombs, John W., Houston, Texas	1884				
Coomes, M. F., Louisville, Ky.	1887				
Coop, W. H., Dyersburg, Tenn.	1883				
Coop, A. F., Oil City, Pa.	1874				
Cooper, A. M., Mount Pleasant, Pa.	1889				
Cooper, Charles N., Cleveland, O.	1880				
Cooper, John M., Wellsburg, W. Va.	1879				
Cooper, Joshua M., Meadville, Pa.	1888				
Cooper, Wm. S., Troy, N. Y.	1880				
Cooper, Wm. D., Morrisville, Va.	1884				
Cooper, E. H., Harrisburg, Pa.	1877				
Cordier, Albert H., McPherson, Ky.	1888				
Corlett, Wm. T., Cleveland, O.	1888				
Cornick, Boyd, Mascoutah, Ill.	1886				
Cornish, Aaron, New Bedford, Mass.	1887				
Corr, A. C., Carlinville, Ill.	1886				
Corson, Hiram, Plymouth Meeting, Pa.	1881				
Corson, O. M., Middletown, O.	1881				
Cortelyou, Peter R., Marietta, Ga.	1887				
Cosgrove, Thomas, Auburn, O.	1883				
Cotter, R. O., Macon, Ga.	1890				
Cottle, C. C., Marshalltown, Iowa	1890				
Cottrell, Jos. F., Washington, D. C.	1881				
Cottrell, S. Parker, Boston, Mass.	1889				
Cowan, J. E., Galesburg, Ill.	1882				
Cowden, J. W., Rock Island, Ill.	1870				
Cowen, Harry J., Danville, Ky.	1888				
Cowen, J. B., Lebanon, Tenn.	1890				
Cowles, Edw., Somerville, Mass.	1878				
Cox, J. B., Huntington, Tenn.	1890				
Cox, Wm. M., Mt. Sterling, Ill.	1883				
Coyle, J. M., Nashville, Tenn.	1883				
Coynes, S. J., Aberdeen, S. Dak.	1890				
Coad, James, Reynolds, Ill.	1876				
Craig, Alexander, Columbia, Pa.	1870				
Craig, G. G., Rock Island, Ill.	1878				
Craig, J. Harvey, Mansfield, O.	1888				
Craig, J. W., Mansfield, O.	1878				
Craig, Norman S., Cedar Rapids, Iowa	1887				
Crain, F. M., Doland, S. Dak.	1886				
Crain, M. R., Rutland, Vt.	1887				
Crampton, O. L., Mobile, Ala.	1872				
Crane, Julius A., Santa Anna, Cal.	1889				
Crapo, G. W., Terre Haute, Ind.	1878				
Crapo, John E., Terre Haute, Ind.	1888				
Crawford, J. E., Cedar Rapids, Iowa	1887				
Crawford, J. B., Wilkesbarre, Pa.	1872				
Crawford, J. K., Cooperstown, Pa.	1876				
Crawford, J. L., Greensburg, Pa.	1876				
Crawford, J. Y., Nashville, Tenn.	1886				
Crawford, N. B., Eureka, Ill.	1890				
Crawford, Robert, Cooperstown, Pa.	1878				
Crawford, Sarah M., Norfolk, Mass.	1889				
Creel, M. P., Central City, Ky.	1887				
Creveling, J. P., Auburn, N. Y.	1890				
Criley, B. H., Dallas Centre, Iowa	1878				
Crockett, S. S., Nashville, Tenn.	1890				
Croft, T. G., Aiken, S. C.	1870				
Cronyn, John, Buffalo, N. Y.	1878				
Crook, J. A., Jackson, Tenn.	1855				
Cross, B. F., Decatur, Ala.	1890				
Crossfield, F. S., Hartford, Conn.	1889				
Crowthwaite, G. W., Florence, Tenn.	1890				
Crothers, T. D., Hartford, Conn.	1858				
Crouse, D. W., Waterloo, Iowa	1874				
Crow, A. M., Kansas City, Mo.	1857				
Crow, J. T., Carrollton, Ill.	1866				
Crummer, B. F., Omaha, Neb.	1882				
Crunk, W. F., Fayetteville, Tenn.	1890				
Crutch, T. P., Nashville, Tenn.	1890				
Culbertson, J. C., Cincinnati, O.	1880				
Culbertson, R. H., Brazil, Ind.	1881				
Culbertson, Scott, Moorfield, Ind.	1890				
Cullen, Frank C., Chicago, Ill.	1887				
Cumming, Willis, Bridgeport, Conn.	1890				
Cumple, J. J., Madison, Kan.	1883				
Cunningham, J. G., Kittanning, Pa.	1883				
Cunningham, J. M., Bedford, Tenn.	1890				
Cupples, George, San Antonio, Texas	1884				
Curles, Wm., Fackee, Cal.	1884				
Curley, P. F., Newport, R. I.	1890				
Currie, Daniel A., Englewood, N. J.	1878				
Curtin, Roland Gregg, Philadelphia, Pa.	1880				
Curtis, H. H., New York, N. Y.	1889				
Curtis, R. M., Union, Ill.	1890				
Curtis, W. E., McKenzie, Tenn.	1890				
Curtman, Charles O., St. Louis, Mo.	1873				
Curwen, John, Warren, Pa.	1879				
Cushing, E. W., Boston, Mass.	1886				
Cushing, H. K., Cleveland, O.	1878				
Cushman, H., Blair, Neb.	1884				
Custer, I. E., Dayton, O.	1890				
Cutter, Ephraim, New York, N. Y.	1871				
Cutter, John Ashburton, New York, N. Y.	1888				
	1885				
Czarnowski, O., New Orleans, La.	1885				
Dabney, John D., Tohula, Miss.	1889				
Dabney, T. S., Kansas City, Mo.	1885				
Dabney, W. C., Charlottesville, Va.	1875				
Degenais, A., Buffalo, N. Y.	1880				
Daggett, B. H., Buffalo, New York	1886				
Dagberg, Alfred, Chicago, Ill.	1887		</		

Dean, H. M., Muscatine, Iowa.	1876	Duke, Benjamin F., Lake Como, Miss.	1890	Eve, Paul F., Nashville, Tenn.	1882
Deering, T. Haven, Braintree, Mass.	1887	Dulles, Charles W., Philadelphia, Pa.	1884	Everhard, F. A., Ripon, Wis.	1890
Deaver, John B., Philadelphia, Pa.	1889	Duncan, B. A., West Point, Miss.	1884	Everhard, N. S., Wadsworth, O.	1874
Deaver, J. M., Buck, Pa.	1884	Duncan, J. A., Toledo, O.	1883	Everts, Orpheus, College Hill, O.	1886
DeCamp, Wm. H., Grand Rapids, Mich.	1867	Duncan, J. K. L., Dewitt, Neb.	1884	Ewing, C. C., Aberdeen, Miss.	1879
Deering, A. A., Boone, Iowa.	1878	Duncan, John H., Kansas City, Mo.	1884	Ewing, D. C., Batesville, Ark.	1880
DeGarmo, W. B., New York, N. Y.	1889	Dundorf, A. B., Reading, Pa.	1873	Ewing, James, Uniontown, Pa.	1889
Dekle, Thomas A., Thomasville, Ga.	1887	Dunglison, Richard J., Philadelphia, Pa.	1874	Ewing, R. B., West Grove, Pa.	1881
DeLany, J. O. F., St. Louis, Mo.	1880	Dunham, Carroll, Irvington, N. Y.	1889	Ewing, W. G., Nashville, Tenn.	1886
Dellenbaugh, C. C., Portland, Mich.	1877	Dunham, Wm. H., Cincinnati, O.	1888	Eyster, G. L., Rock Island, Ill.	1886
DeLong, W. H., Emporia, Fla.	1884	Dunklin, Frank H., Gallatin, Tenn.	1890		
Denise, J. C., Omaha, Neb.	1886	Dunlap, Albert, Winslow, Ark.	1885		
Denison, Charles, Denver, Col.	1875	Dunlap, Alexander, Springfield, O.	1873	Fackler, G. A., Cincinnati, O.	1886
Denison, C. Ellery, New York, N. Y.	1889	Dunlap, A. S., Chattanooga, Tenn.	1875	Fairbank, Henry C., Flint, Mich.	1873
Denney, Z. Coleman, Mt. Vernon, Mo.	1886	Dunlap, Charles W., Springfield, O.	1888	Fairchild, D. S., Ames, Iowa.	1882
Dennis, F. S., New York, N. Y.	1883	Dunlap, Fayette, Danville, Ky.	1885	Falls, W. H., Cincinnati, O.	1888
Dennis, S. W., San Francisco, Cal.	1886	Dunlap, Harley M., Battle Creek, Mich.	1888	Farlow, J. W., Boston, Mass.	1889
Dent, W. Marmaduke, Newburg, West Va.	1870	Dunlavy, J. Craig, Sioux City, Iowa.	1887	Farnham, LeRoy, Binghampton, N. Y.	1881
Desaussure, P. G., Charleston, S. C.	1890	Dunmire, George Benson, Philadelphia, Pa.	1884	Farnham, George W., Beatrice, Neb.	1890
Deschweinitz, G. E., Philadelphia, Pa.	1890	Dunn, J. C., Pittsburg, Pa.	1884	Farnsworth, P. J., Clinton, Iowa.	1873
Desigethy, C. A. H., Los Angeles, Cal.	1877	Dunn, O. B., Ironton, O.	1883	Farrar, M. C., Fort Madison, Iowa.	1886
Desprez, Louis W., Russellville, Ala.	1890	Dunning, J. H., Indianapolis, Ind.	1876	Farrell, John T., Providence, R. I.	1890
Detwiler, B. H., Williamsport, Pa.	1886	Dunsmore, F. A., Minneapolis, Minn.	1882	Farrington, John M., Binghampton, N. Y.	1889
Deveney, S. C., Chicago, Ill.	1884	Dunsmore, George, St. Albans, Vt.	1882	Farris, Alexander A., Hickman, Ky.	1890
Dewer, J. H., Ft. Loudon, Pa.	1890	Dunwoody, John A., Brunswick, Ga.	1889	Fay, John, Altoona, Pa.	1858
DeVilbiss, Allen, Toledo, O.	1888	DuPre, D., Dallas, Texas.	1890	Fay, O. J., Carleton, Mich.	1890
Dewees, Wm. B., Salina, Kan.	1890	Durant, Ghislain, New York, N. Y.	1876	Fell, George E., Buffalo, N. Y.	1889
DeWitt, Byron, Oswego, N. Y.	1876	Duringer, Wm. A., Fort Worth, Texas.	1890	Fenger Christian, Chicago, Ill.	1882
Dewitt, Wm. H., Cincinnati, O.	1888	Dutton, C. F., Cleveland, O.	1882	Fenn, C. M., San Diego, Cal.	1885
DeZouche, Isaac, Gloversville, N. Y.	1885	Dwelly, Jerome, Fall River, Mass.	1884	Fenno, Henry M., Rochester, N. Y.	1889
Dial, J. J., Sulphur Springs, Texas.	1885			Fenton, Thos. H., Philadelphia, Pa.	1884
Dibrell, J. A., Sr., Van Buren, Ark.	1890			Ferguson, E. D., Troy, N. Y.	1880
Dibrell, J. A., Jr., Little Rock, Ark.	1875	Eads, B. F., Marshall, Texas.	1890	Ferguson, F. C., Indianapolis, Ind.	1887
Dickes, Philip, Boundary, Ind.	1888	Earle, Charles W., Chicago, Ill.	1882	Ferguson, J. W., Congress, O.	1888
Dickey, T. A., Middletown, O.	1888	Earle, G. W., Hermannville, Mich.	1878	Ferrell, C. B., Columbus, O.	1883
Dickinson, D. K., Lead City, S. Dak.	1885	Earl, R. W., Columbus, Wis.	1884	Ferrell, H. V., Cartersville, Ill.	1886
Dickinson, Frances, Chicago, Ill.	1887	Earley, Charles R., Ridgway, Pa.	1887	Ferris, C. M., Tracy, Minn.	1882
Dickinson, G. K., Jersey City, N. J.	1880	Eastland, O., Wichita Falls, Texas.	1885	Fessenden, C. S. D., U. S. M. Hospital Service	1883
Dickinson, Wm., St. Louis, Mo.	1886	Eastman, C. A., Winthrop, Mass.	1890	Fiegenbaum, E. W., Edwardsville, Ill.	1886
Dickinson, W. L., East Saginaw, Mich.	1880	Eastman, Joseph A., Indianapolis, Ind.	1873	Fiegenbaum, J. H., Alton, Ill.	1887
Dickman, F. F., Fort Scott, Kan.	1884	Eastman, L. M., Baltimore, Md.	1877	Fieck, A. G., Des Moines, Iowa.	1888
Dickson, W. L., Rush Point, La.	1885	Eastman, Wm., Mineral Point, Wis.	1882	Fiefield, M., Centerville, R. I.	1880
Dicus, G. A., Streator, Ill.	1890	Easton, C. M., Hebron, Neb.	1889	Findley, Wm. Martin, Altoona, Pa.	1869
Didams, Henry D., Syracuse, N. Y.	1864	Eccles, R. G., Brooklyn, N. Y.	1888	Fink, Isaac W., Hillsboro, Ill.	1879
Dieffenbacher, P. L., Havana, Ill.	1881	Eckelman, F. C., Elkhart, Ind.	1887	Finley, Mary J., Mansfield, O.	1888
Dille, G. W., Cooperstown, Pa.	1883	Eckley, W. T., Harper, Iowa.	1887	Firestone, W. W., Wooster, O.	1887
Dillon, J., Eureka, Kan.	1886	Edes, Robert T., Washington, D. C.	1889	Fischer, W. E., St. Louis, Mo.	1884
Dimmitt, F. W., Oneida, Ill.	1888	Edwards, Amos S., Syracuse, N. Y.	1878	Fischer, Emil, Philadelphia, Pa.	1868
Dimond, Henry C., Springfield, O.	1888	Edwards, Geo. A., Syracuse, N. Y.	1884	Fish, W. H., Baylis, Ill.	1885
Diamukes, J. L., Mayfield, Ky.	1890	Edwards, John B., Manston, Wis.	1887	Fisher, B. H., Steubenville, O.	1883
Divelbiss, John R., LaCygne, Kan.	1886	Edwards, Landon B., Richmond, Va.	1887	Fisher, Charles H., Providence, R. I.	1888
Divine, J. H., Sioux Rapids, Iowa.	1886	Egan, J. C., Shreveport, La.	1879	Fisher, George C., Patoka, Ind.	1888
Dixon, Archibald, Henderson, Ky.	1888	Eggers, John T., Kansas City, Mo.	1887	Fisher, Theo. W., Boston, Mass.	1876
Dixon, J. N., Springfield, Ill.	1887	Egleston, W. G., Chicago, Ill.	1886	Fisk, Cyrus M., Lowell, Mass.	1889
Doak, W. H., Russellville, Tenn.	1890	Eldson, J. W., Bourbon, Ind.	1887	Fisk, M. H., Wauwatosa, Wis.	1882
Dobbins, W. O., Fort Gaines, Ga.	1890	Eiskamp, G. C., Richmond, Ind.	1889	Fiske, George F., Chicago, Ill.	1887
Dobson, Augustus T., Camden, N. J.	1889	Eldridge, E. F., New London, Wis.	1885	Fitch, G. N., Logansport, Ind.	1878
Dock, George, Galveston, Texas.	1890	Eldridge, Jas. H., East Greenwich, R. I.	1885	Fitch, Thos. Davis, Chicago, Ill.	1884
Dodge, E. O., Pond du Lac, Wis.	1888	Eliot, Ellsworth, New York, N. Y.	1880	Fitch, Thomas S., P. Orange, N. J.	1889
Dodge, H. O., Boulder, Colo.	1877	Eliot, Gustavus, New Haven, Conn.	1884	Fitch, W. H., Rockford, Ill.	1884
Dodson, John M., Chicago, Ill.	1888	Ellenberger, J. W., Harrisburg, Pa.	1884	Fitzgerald, Wm., Grand Mound, Iowa.	1887
Dodson, N. M., Berlin, Wis.	1872	Ellegood, E. W. G., Concord, Del.	1883	Flandra, Thos. M., Rome, N. Y.	1878
Doering, E. J., Chicago, Ill.	1887	Elliswood, A. G., Attica, N. Y.	1880	Fleischer, Henry, New Haven, Conn.	1888
Dolley, Sarah R., Rochester, N. Y.	1889	Elliot, J. M., Hickory Corners, Mich.	1881	Fletcher, C. I., Indianapolis, Ind.	1887
Donaldson, E. F., Washash, Ind.	1884	Elliot, W. S., Woodford, Tenn.	1890	Fletcher, W. B., Indianapolis, Ind.	1886
Donaldson, John B., Canonsburg, Pa.	1884	Elmer, H. W., Bridgeton, N. J.	1884	Flinn, W. D., Redwood Falls, Minn.	1883
Donahoe, Henry James, Sandusky, O.	1886	Elmer, John, Denver, Colo.	1871	Flint, Austin, New York, N. Y.	1860
Donelson, C. F., Muskegon, Mich.	1885	Emack, F. D., Phenixville, Pa.	1880	Flint, James M., U. S. Navy.	1878
Donges, John W., Camden, N. J.	1884	Emerson, George, Winfield, Kan.	1886	Flick, Lawrence F., Philadelphia, Pa.	1889
Dora, James W., Mattoon, Ill.	1874	Emerson, Justus E., Detroit, Mich.	1887	Florentine, F. B., Saginaw, Mich.	1886
Dorland, James, Milwaukee, Wis.	1877	Emmert, Joseph M., Atlantic, Iowa.	1887	Floyd, R. G., Eureka Springs, Ark.	1877
Dorland, W. L., Pueblo, Colo.	1883	Emmons, J. W., Sparta, Wis.	1887	Fly, A. W., Galveston, Texas.	1885
Dorsett, Walter C., Columbia, Tenn.	1890	Enfield, Chas., Jefferson, Iowa.	1886	Flynn, Wm., Marion, Ind.	1887
Dorsett, Wm., Joliet, Ill.	1877	Engelmann, George J., St. Louis, Mo.	1876	Focht, Wm. H., New Riegel, O.	1887
Dougan, W. T., Vandalia, Mich.	1889	Engel, Rosa H., Chicago, Ill.	1887	Folwell, Mahlon B., Buffalo, N. Y.	1878
Dougherty, P., Chicago, Ill.	1889	English, D. C., New Brunswick, N. J.	1870	Foot, D. E., Belvidere, Ill.	1878
Doughty, Wm. H., Augusta, Ga.	1890	Enochs, M. A. L., Flat Creek, Tenn.	1890	Forbes, Samuel F., Toledo, O.	1874
Douglas, George, Oxford, N. Y.	1890	Enochs, Wm. N., Hunting Creek, Tenn.	1890	Forbes, Wm. H., Richmond Hill, N. Y.	1883
Douglas, Richard, Nashville, Tenn.	1890	Ensign, H. D., Boone, Iowa.	1878	Forbes, Wm. S., Philadelphia, Pa.	1884
Douglass, T. J., Ottumwa, Iowa.	1887	Ensign, W. O., Rutland, Ill.	1877	Forbes, Samuel L., Wequetonsing, Mich.	1874
Douglass, W. H., Columbia, Mo.	1880	Erdsman Wm. B., Macungie, Pa.	1887	Ford, F. H., Waco, Texas.	1886
Dove, Silas C., Westfield, Ind.	1890	Ermine, Lucy E., Chicago, Ill.	1887	Ford, J. H., Washash, Ind.	1886
Doyle, Gregory, Syracuse, N. Y.	1882	Eschbach H. Clay, Albion, Iowa.	1887	Fordham, Wm. F., Pensacola, Fla.	1890
Doyle, Thomas H., St. Joseph, Mo.	1878	Esig, N. Fred, Spokane Falls, Wash.	1887	Fordyce, Benj. A., Union Springs, N. Y.	1889
Drake, A. P., Hastings, Mich.	1883	Estabrook, T. H., Rockland, Me.	1879	Formad, Henry F., Philadelphia, Pa.	1889
Drake, Howard H., Norristown, Pa.	1890	Etheridge, J. H., Chicago, Ill.	1885	Foreman, J. M., Jonesburg, Mo.	1873
Drake, Isaac L., Lebanon, O.	1883	Evans, Earl, Winchester, N. H.	1880	Formento, Felix, New Orleans, La.	1890
Draghan, John A., Nashville, Tenn.	1886	Evans, E. B., Greencastle, Ind.	1882	Forshae, Thos. W., Madison, Ind.	1887
Drayer, Peter, Hartford City, Ind.	1882	Evans, E. C., Sedalia, Mo.	1886	Forster, Wm., South Oil City, Pa.	1884
Drew, A. M., Weldon, Ill.	1886	Evans, George A., Brooklyn, N. Y.	1888	Fortner, B. F., Vinita, I. T.	1876
Drewry, J. W., Eufaula, Ala.	1875	Evans, G. B., Dayton, O.	1889	Forwood, W. H., U. S. Army.	1879
Drysdale, Thomas M., Philadelphia, Pa.	1883	Evans, Jas. Hosmer, S. C.	1881	Foster, A. H., Chicago, Ill.	1887
DuBoise, Wilds S., Columbiana, Ala.	1890	Evans, O., Franklin, O.	1888	Foster, Eugene, Augusta, Ga.	1887
Dudley, A. Palmer, New York, N. Y.	1884	Evans, O. E., Gowrie, Iowa.	1882	Foster, Thos., Portland, Me.	1882
Dudley, E. C., Chicago, Ill.	1883	Evans, R. F., Franklin, O.	1885	Foster, Warren W., Washington, D. C.	1884
Dudley, E. H., Janesville, Wis.	1882	Evans, Thos. B., Baltimore, Md.	1872	Foster, William S., Pittsburgh, Pa.	1877
Dudley, H. W., Hillsboro, Texas.	1885	Evans, Warwick, Washington, D. C.	1870	Foulks, Chas. A., Chicago, Ill.	1887
Duffield, S. P., Detroit, Mich.	1883	Evans, W. A., Jr., Aberdeen, Miss.	1889	Fouet, Wm. T., Lenoira, Tenn.	1885
Duffin, W. L., Guttenberg, Iowa.	1887	Evans, W. H., Sedalia, Mo.	1880		
DuHadway, C., Jerseyville, Ill.	1882	Evans, W. W., Oxford, Ga.	1879		
Duhring, L. A., Philadelphia, Pa.	1884	Eve, Duncan, Nashville, Tenn.	1879		

Fowler, S. W., Delaware, O.	1883	Gerrish, Millard F., Seymour, Ind.	1888	Green, P. B., Ft. Payne, Ala.	1890
Fox, Chas. J., Williamantic, Conn.	1880	Gerry, Edwin P., Jamaica Plains, Mass.	1889	Green, Traill, Faston, Pa.	1853
Fox, D. R., Jesuits Bend, La.	1885	Getz, H. Landis, Marshalltown, Iowa.	1882	Green, Walter D., Philadelphia, Pa.	1890
Fox, Edward G., Weathersfield, Conn.	1889	Ghent, H. C., Belton, Texas.	1882	Greenwalt, G. L., Fort Wayne, Ind.	1883
Fox, Lorenzo Smith, Lowell, Mass.	1884	Gibb, Joseph S., Philadelphia, Pa.	1889	Greenawald, P. S., Smithville, O.	1890
Fox, L. Webster, Philadelphia, Pa.	1887	Gibbon, W. H., Charlton, Iowa.	1885	Greene, Benjamin, Portsmouth, R. I.	1889
Fox, Philip, Madison, Wis.	1877	Gibbons, Jas. H., Baltimore, Md.	1884	Greene, George H., Marshall, Mich.	1886
Fox, William, Milwaukee, Wis.	1876	Gibbs, L. H., Scranton, Pa.	1881	Greene, W. C., St. Louis, Mo.	1886
Frame, John A., Athens, O.	1888	Gibney, V. P., New York, N. Y.	1881	Greenleaf, Daniel C., Bloomfield, Iowa.	1887
Francis, Valentine M., Newport, R. I.	1889	Gibson, George H., Denver, Colo.	1888	Greenley, T. L., West Point, Ky.	1877
Frank, Chas. P., Detroit, Mich.	1883	Gibson, John H., McKenny, Texas.	1890	Greenfields, Wm., Romeo, Mich.	1874
Frank, Johnston, Sharp, Ky.	1888	Gibson, J. S. P., Staunton, Va.	1881	Gregg, Vincent H., Connellsville, Ind.	1883
Franklin, Charles H., Union Springs, Ala.	1884	Gibson, L. P., Little Rock, Ark.	1885	Gregory, E. H., St. Louis, Mo.	1872
Franklin, G. S., Chillicothe, O.	1883	Gibson, R. D., Youngstown, O.	1883	Gregory, L. M., Stevens Point, Wis.	1883
Frantzoni, C. W., Washington, D. C.	1872	Gibson, Wm., Alexandria, Va.	1884	Grimm, C. C., Vinton, Iowa.	1877
Fraser, W. E., Bismark, N. Dakota.	1884	Gibson, W. J., Philadelphia, Pa.	1888	Griffith, B. M., Springfield, Ill.	1882
Fraunfelder, Jos., Canton, O.	1883	Giddings, A. W., Anoka, Minn.	1884	Griffith, J. D., Kansas City, Mo.	1886
Frazer, A. Blair, Philadelphia, Pa.	1889	Giddings, Theo., Housatonic, Mass.	1876	Griffiths, Geo. W., Louisville, Ky.	1887
Free, Spencer M., Beech Tree, Pa.	1884	Gifford, Wm. R., Toledo, O.	1884	Grigg, Samuel C., Murfreesboro, Tenn.	1890
Freeland, N. H., Tarrytown, N. Y.	1876	Gihon, Albert Leary, U. S. Navy.	1876	Grimes, George J., Columbus, Ga.	1879
Freeman, C. A., Trenton, Mo.	1887	Gilbert, J. H., Quincy, Mass.	1876	Grimes, W. S., Wapello, Iowa.	1882
Freeman, Edw. D., Osgood, Ind.	1884	Gill, George F., St. Louis, Mo.	1886	Grimstead, W. F., Charleston, Mo.	1885
Freeman, J. A., Millington, Ill.	1882	Gill, H. Z., Eldorado, Kan.	1887	Griser, F. G., Collins, Ind.	1886
Freeman, J. W., Central City, S. Dak.	1885	Gillespie, G. B., Covington, Tenn.	1886	Grisson, Eugene, Denver, Colo.	1872
Frederick, Carlton C., Buffalo, N. Y.	1888	Gillett, J. S., Rich Hill, Mo.	1886	Griswell, W. C., Morris Creek, Tenn.	1890
French, George F., Minneapolis, Minn.	1882	Gillett, H. W., Newport, R. I.	1889	Griswold, Elisha, Sharon, Pa.	1872
French, George Merrill, Malden, Mass.	1889	Gilliam, D. Todd, Columbus, O.	1889	Griswold, J. B., Grand Rapids, Mich.	1876
French, James M., Cincinnati, O.	1883	Gilliford, R. H., Allegheny, Pa.	1883	Griswold, S. C., New Haven, Mo.	1886
French, P., Mexico, Mo.	1886	Gilman, A. O., St. Cloud, Minn.	1882	Griswold, S. H., Rutland, Vt.	1887
French, S. H., Amsterdam, N. Y.	1883	Gilman, H. A., Mt. Pleasant, Iowa.	1885	Groner, F. J., Grand Rapids, Mich.	1884
French, Simeon S., Battle Creek, Mich.	1877	Gilmore, John N., Gaston, Ala.	1886	Gronvold, Chr., Norway, Minn.	1889
French, S. W., Milwaukee, Wis.	1883	Gilson, George H., Shipman, Ill.	1887	Gross, Onan B., Camden, N. J.	1880
Frew, W. C., Coshocton, O.	1887	Gist, D. R., Sparta, Tenn.	1890	Grove, J. H., Philadelphia, Pa.	1867
Fricke, Albert, Philadelphia, Pa.	1872	Given, S. A., Mercer, Clifton Heights, Pa.	1889	Grove, Joseph Marion, Tipton, Ind.	1888
Friedrichs, George J., New Orleans, La.	1884	Glasgow, Frank A., St. Louis, Mo.	1886	Gudden, Bernard C., Oshkosh, Wis.	1887
Friedenwald, A., Baltimore, Md.	1884	Glasgow, W. Carr, St. Louis, Mo.	1875	Guenether, Julius, Quincy, Ill.	1884
Frierson, Theodore, Columbia, Tenn.	1890	Gleitsman, Joseph W., New York, N. Y.	1879	Guensey, A. H., Amherst, Wis.	187
Frissell, C. M., Wheeling, W. Va.	1883	Glenn, George S., Nashville, Tenn.	1890	Guhman, N., St. Louis, Mo.	1886
Fritchey, John A., Harrisburg, Pa.	1888	Glenn, W. Frank, Nashville, Tenn.	1880	Guice, N. L., Natchez, Miss.	1884
Frothingham, George E., Detroit, Mich.	1874	Gidden, Chas. H., Little Falls, N. Y.	1889	Guiford, Wm. M., Lebanon, Pa.	1883
Fry, Chas. W., Bracken, Ind.	1887	Glisan, R., Portland, Ore.	1884	Gunnell, F. M., U. S. Navy.	1876
Fry, Frank R., St. Louis, Mo.	1887	Glover, E. B., Terre Haute, Ind.	1884	Gunsauls, F., Columbus, O.	1887
Fry, Henry D., Washington, D. C.	1884	Goben, G. A., Kirksville, Mo.	1886	Cutch, Wm., Albion, Iowa.	1876
Fulkerson, P. S., Lexington, Mo.	1886	Goble, Ezra T., Earlville, Ill.	1887	Cuth, M. S., Warren, Pa.	1883
Fuller, A. H., St. Louis, Mo.	1886	Gobrecht, Wm. H., Washington, D. C.	1888	Cuthrie, Adam, Jr., Quitman, Ark.	1890
Fuller, A. J., Bath, Me.	1876	Godbey, Milton, Salem, Mo.	1886	Cuthrie, Alexander, Fort Worth, Tex.	1882
Fuller, D. E., Hastings, Mich.	1887	Godding, Clarence M., Providence, R. I.	1889	Cuthrie, H. R., Sparta, Ill.	1880
Fuller, Frank B., Providence, R. I.	1889	Godding, Walter W., Washington, D. C.	1884	Guttery, Wm. V., Middleton, Ill.	1890
Fuller, Horace S., Hartford, Conn.	1884	Godfrey, Chas. C., Bridgeport, Conn.	1889		
Fullerton, O. J., Waterloo, Iowa.	1886	Godfrey, E. L. B., Camden, N. J.	1881	Hackett, C. J., LeMars, Iowa.	1882
Fullilove, T. W., Vaiden, Miss.	1885	Godfrey, Henry T., Galena, Ill.	1881	Hadley, Evan, Indianapolis, Ind.	1888
Fullinwider, C. H., Petersburg, Ind.	1890	Goldspohn, Albert, Chicago, Ill.	1885	Hadra, Berthold E., Galveston, Texas.	1885
Fulton, Andrew L., Kansas City, Mo.	1888	Good, A. H., Selma, Ind.	1885	Hadsci, H. S., Maynard, Iowa.	1887
Fulton, John C., Murray, Ind.	1887	Goodall, F. W., Bennington, Vt.	1890	Hagey, J. M., Mt. Morris, N. Y.	1889
Fulton, J. F., St. Paul, Minn.	1883	Goodbrake, C., Clinton, Ill.	1876	Haggard, J. R., Lincoln, Neb.	1890
Funkhauser, R. M., St. Louis, Mo.	1884	Good, George H., Cincinnati, O.	1890	Haggard, W. D., Nashville, Tenn.	1885
Furney, E. F., St. Louis, Mo.	1886	Goodell, William, Philadelphia, Pa.	1872	Hagner, Daniel R., Washington, D. C.	1884
Furniss, J. P., Selma, Ala.	1879	Goodman, H. Earnest, Philadelphia, Pa.	1873	Haght, Thos. D., Fayetteville, N. C.	1883
		Goodman, Thos. B., Cobden, Ill.	1888	Haines, W. D., Cincinnati, O.	1888
		Goodner, D. M., Fayetteville, Tenn.	1890	Haines, W. S., Chicago, Ill.	1887
		Goodrich, Chas. F., New Haven, Mo.	1886	Hakes, Harry, Wilkesbarre, Pa.	1880
		Goodrich, E. C., Augusta, Ga.	1880	Halbert, O. L., Waco, Texas.	1885
		Goodwin, Albert, Effala, Ala.	1885	Halderman, F. D., Ord, Neb.	1884
		Goodwin, B. C., Marvel, Ark.	1890	Hall, C. Lester, Marshall, Mo.	1882
		Gordon, A., Quincy, Mass.	1883	Hall, J. C., Anguilla, Miss.	1877
		Gordon, Seth C., Portland, Me.	1883	Hall, John C., Frankfort, Pa.	1885
		Gordon, Thos. W., Georgetown, O.	1875	Hall, Junius M., Chicago, Ill.	1887
		Gordon, W. A., Chester, Ill.	1880	Hall, Lemuel T., Potosi, Ill.	1885
		Gore, D. C., Paris, Mo.	1887	Hall, R. N., Chicago, Ill.	1887
		Gores, Ferd. C., Norwood, O.	1888	Hall, Robert S., Chicago, Ill.	1888
		Gorgas, Lawrence D. L., Chicago, Ill.	1887	Hall, Rufus B., Cincinnati, O.	1888
		Gorrell, J. R., Newton, Iowa.	1890	Hall, R. W., Moundsville, W. Va.	1883
		Goss, Isham E., Athens, Ga.	1888	Hall, Winfield S., Haverford College, Pa.	1889
		Gouley, J. W. S., New York, N. Y.	1873		
		Gourley, W. W., Sharon, Tenn.	1890	Hall, Willis W., Springfield, O.	1888
		Govan, Wm., Stony Point, N. Y.	1860	Hallam, J. L., Centralia, Ill.	1885
		Gove, George S., Whitefield, N. H.	1884	Haller, F. B., Vandalia, Ill.	1890
		Gracy, B. B., Smyrna, Tenn.	1890	Halley, C. R., Forristell, Mo.	1880
		Gradle, Henry, Chicago, Ill.	1887	Halley, George, Kansas City, Mo.	1878
		Gracie, Chas., Sandusky, O.	1884	Halley, Calvin C., Montrose, Pa.	1887
		Gractlinger, A., Milwaukee, Wis.	1876	Hamer, W. W., DeGraff, O.	1890
		Graff, Harold, Eau Claire, Wis.	1890	Hamilton, B. F., Emulenton, Pa.	1883
		Graham, A. W., Holstein, Mo.	1885	Hamilton, D. N., Connorsville, Ind.	1888
		Graham, Douglas, Boston, Mass.	1890	Hamilton, George, Bachelor, Mo.	1882
		Graham, D. W., Chicago, Ill.	1886	Hamilton, Horatio A., Ferrysburg, O.	1887
		Graham, J. W., Denver, Colo.	1886	Hamilton, Increase S., Tecumseh, Mich.	1884
		Graham, Samuel, Butler, Pa.	1878	Hamilton, John B., Washington, D. C.	1873
		Grainger, R. A., Paris, Tenn.	1890	Hamilton, J. W., Columbus, O.	1880
		Grant, G. H., Richmond, Ind.	1888	Hamilton, Wm. D., Columbus, O.	1890
		Grant, H. H., Louisville, Ky.	1886	Hammer, Charles, Schenectady, N. Y.	1889
		Grant, W. W., Denver, Colo.	1873	Hammer, Robert B., Greensburg, Pa.	1889
		Gratiot, C. C., Shullsburg, Wis.	1888	Hammond, T. V., Washington, D. C.	1890
		Graves, Eli E., Boscowan, N. H.	1884	Hampton, S. E., Milton, Ky.	1890
		Graves, Spencer, St. Louis, Mo.	1886	Hanawalt, G. P., Des Moines, Iowa.	1878
		Grayston, F. S. C., Huntington, Ind.	1885	Hanawalt, H. O., Kansas City, Mo.	1882
		Green, Earl, Mt. Vernon, Ill.	1886	Hantcock, W. H., Paris, Texas.	1890
		Green, Frank D., Louisville, Ky.	1889	Handley, V. E., Sturgis, Ky.	1890
		Green, J. J., Pittsburg, Pa.	1883	Hanna, Levi M., Greencastle, Ind.	1886
		Green, James S., Elizabeth, N. J.	1872	Hanna, Rebecca, Red Oak, Iowa.	1886
		Green, John W., Marengo, Ill.	1887	Hanna, W. M., Henderson, Ky.	1873
		Green, J. W., Shelbyville, Ind.	1882	Hanner, Jas. P., Franklin, Tenn.	1890
Gable, Isaac C., York, Pa.	1880				
Gabriel, J. F., Piqua, O.	1883				
Gaddis, Levi S., Uniontown, Pa.	1884				
Gage, Ellen C., Salt Lake City, Utah	1887				
Gage, M. R., Sparta, Wis.	1881				
Gaines, W. T., Nashville, Tenn.	1890				
Galbraith, W. J., Omaha, Neb.	1886				
Galligan, Edw. F., Taunton, Mass.	1889				
Galt, Thomas, Rock Island, Ill.	1873				
Gamble, Thomas D., Wheatland, Iowa.	1882				
Gant, Harris A., Water Valley, Miss.	1890				
Gapen, Clark, Emporia, Kan.	1883				
Garcelon, Alonzo, Lewiston, Me.	1873				
Gardiner, Chas., Emporia, Kan.	1883				
Gardner, Edwin J., Chicago, Ill.	1889				
Gardner, Henry K., Wakefield, R. I.	1889				
Gardner, C. T., Providence, R. I.	1880				
Garfield, L. K., Algona, Iowa.	1887				
Garland, Geo. M., Boston, Mass.	1885				
Garloch, F. R., Racine, Wis.	1886				
Garnett, Judson W., Greenville, Texas.	1884				
Garratt, Alfred C., New York, N. Y.	1876				
Garten, M. H., Lincoln, Neb.	1889				
Garver, John J., Indianapolis, Ind.	1884				
Garvin, Lucius F. C., Lonsdale, R. I.	1889				
Garwood, A., Cassopolis, Mich.	1887				
Gaston, John McF., Atlanta, Ga.	1886				
Gates, Lowell M., Scranton, Pa.	1889				
Gaut, J. O. K., Plattsburg, Mo.	1886				
Gavin, M. S., Boston, Mass.	1884				
Gawne, A. J., Sandusky, O.	1883				
Gay, George W., Boston, Mass.	1889				
Gay, Norman, Columbus, O.	1884				
Gazzo, John B. C., Thibodeaux, La.	1877				
Geddings, W. H., Alken, S. C.	1886				
Gehrung, F. C., St. Louis, Mo.	1886				
Geiger, Jacob L., St. Joseph, Mo.	1878				
Gemmell, J. M., Jr., Tyrone, Pa.	1884				
George, Basil, Enterprise, Miss.	1885				
Gerhard, J. Z., Harrisburg, Pa.	1878				
German, W. H., Morgan Park, Ill.	1887				

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Ish, Milton A., Neabasco Mills, Mo.	1884	Kane, Evan O., Kane, Pa.	1888	Kolbenhoyer, Fred., St. Louis, Mo.	1886
Isham, Ralph N., Chicago, Ill.	1859	Kaster, John P., Albuquerque, N. M.	1888	Kollock, Chas. W., Charleston, S. C.	1885
Isard, Henry, Meridian, Miss.	1890	Kaufmann, Jacob S., Blue Island, Ill.	1887	Kornerman, H. A., Newark, N. J.	1888
Jackson, Albert P., Oakfield, N. Y.	1889	Kauli, Wm. M., Frankfort, S. D.	1888	Krats, Harvey, New Britain, Pa.	1889
Jackson, A. Reeves, Chicago, Ill.	1887	Kay, T. W., Scranton, Pa.	1883	Krause, J. H., Plumsteadville, Pa.	1889
Jackson, C. O., Victor, N. Y.	1884	Kean, Norman J., Northwood, Iowa	1884	Krawgrill, David, Wadestown, Ind.	1888
Jackson, Edward, Philadelphia, Pa.	1884	Kearns, W. D., Pittsburgh, Pa.	1885	Krueger, C. L., Madisonville, O.	1883
Jackson, John A., Tampa, Fla.	1889	Kedsie, Robert C., Lansing, Mich.	1887	Krueger, C. W., Carlisle, Pa.	1884
Jackson, John H., Fall River, Mass.	1884	Keefe, John W., Providence, R. I.	1889	Krouse, Louis J., Cincinnati, O.	1888
Jackson, Samuel K., Norfolk, Va.	1881	Keen, W. C., Albany, Ky.	1889	Kuhn, Daniel, St. Louis, Mo.	1886
Jackson, T. B., Kansas City, Mo.	1886	Keene, Geo. F., Howard, R. I.	1889	Kurz, C. E., Bellaire, O.	1883
Jacobs, L. D., Emporia, Kan.	1883	Keene, L. S., La Porte, Ind.	1883	Kutnewsky, J. K., Redfield, S. D.	1890
Jacobs, W. C., Akron, O.	1883	Kegan, Chas. J., Canal Ind.	1888		
Jacobson, Nathan, Syracuse, N. Y.	1890	Kegley, Eugene A., Cedar Rapids, Iowa.	1884		
Jacobus, Arthur M., New York, N. Y.	1889	Kelch, J. H., Evansville, Ind.	1890	La Baume, Lydia H., Aurora, Ill.	1860
Jaggard, W. W., Chicago, Ill.	1885	Keller, James M., Hot Springs, Ark.	1889	La Count, David, Chilton, Wis.	1873
Jameson, J. S., Hornellsville, N. Y.	1885	Kelleam, Jas. M., Ft. Smith, Ark.	1886	Lacey, Thomas H., Council Bluffs, Iowa.	1887
Janes, D. W., Boston, Mass.	1877	Kelley, Howard A., Baltimore, Md.	1888	Lacy, John M., Santa Anna, Cal.	1879
Janes, Henry, Waterbury, Vt.	1871	Kelley, Edw., Lebanon, Ky.	1888	La Ferte, Daniel, Detroit, Mich.	1888
Janeyway, E. G., New York, N. Y.	1880	Kelley, Hiram K., Gallon, O.	1884	La Force, D. A., Ottumwa, Iowa	1886
Janeyway, W. S., Philadelphia, Pa.	1880	Kelley, Webb J., Gallon, O.	1889	Laidley, L. H., St. Louis, Mo.	1886
Jarvin, J. E., New York, N. Y.	1880	Kellogg, J. H., Battle Creek, Mich.	1882	Lamb, D. S., Washington, D. C.	1889
Jarvis, Geo. C., Hartford, Conn.	1872	Kelsey, W. J., Cassopolis, Mich.	1883	Lamb, J., Aurora, Ind.	1886
Jarvis, Wm. C., New York, N. Y.	1881	Kemmerer, Chas. T., Elbridge, Iowa.	1889	Lamb, Theodore, Augusta, Ga.	1885
Jefferson, Herbert P., Lowell, Mass.	1884	Kempe, J. J., Rochester, N. Y.	1883	Lancaster, R. A., Gainesville, Fla.	1885
Jelks, James T., Hot Springs, Ark.	1882	Kemper, Andrew C., Cincinnati, O.	1888	Landis, Wm. H., Como, Ind.	1887
Jenkins, G. F., Keokuk, Iowa	1873	Kemper, G. W. H., Muncie, Ind.	1883	Landon, N. E., Newark, N. Y.	1885
Jenkins, Geo. W., Kilbourn City, Wis.	1879	Kendall, H. W., Quincy, Ill.	1872	Landon, W. M., Fowler, Ill.	1886
Jenkins, John F., Tecumseh, Mich.	1880	Kendall, J. E., Parkersburg, W. Va.	1872	Lane, Jas. A., Leavenworth, Kan.	1890
Jenkins, R. H., Hogsansville, Ga.	1880	Kendig, E. V., Haysville, O.	1884	Lane, Levi Cooper, San Francisco, Cal.	1871
Jenkins, W. O., Terre Haute, Ind.	1886	Kendrick, Cyrus, Litchfield Corners, Me.	1884	Lane, Thomas H., Lincoln, Neb.	1887
Jenks, D. S., Plano, Ill.	1882	Kennedy, N. B., Hillsboro, Texas.	1885	Langan, D., Clinton, Iowa	1872
Jenks, Edward Watrous, Detroit, Mich.	1883	Kennedy, Philip, Laurel, O.	1889	Lange, J. C., Pittsburg, Pa.	1883
Jennings, Chas. G., Detroit, Mich.	1888	Kennedy, S. D., New Orleans, La.	1889	Langitt, W. J., Allegheny, Pa.	1886
Jennings, Roscoe Greene, Little Rock, Ark.	1860	Kennedy, Stiles, St. Louis, Mich.	1885	Langlois, T. J., Wyandotte, Mich.	1874
Jennings, Wm., Richmond, Ky.	1888	Kennedy, T. C., Shelbyville, Ind.	1888	Langdale, Robert G., Rising Sun, Ind.	1888
Jepson, Samuel L., Wheeling, W. Va.	1884	Kenyon, Frank, Scipio, N. Y.	1880	Langdon, D. J., Shenandoah, Pa.	1889
Johnson, Charles W., Litchfield, Ill.	1886	Kenyon, F. P., Middleburgh, Ky.	1888	Lanphear, S. E., Kansas City, Mo.	1886
Johnson, F. M., Kansas City, Mo.	1885	Kenyon, Geo. H., Providence, R. I.	1884	Larimore, F. C., Mt. Vernon, O.	1872
Johnson, Frank S., Chicago, Ill.	1883	Kenworthy, Chas. J., Jacksonville, Fla.	1889	Larrabee, John A., Louisville, Ky.	1887
Johnson, G. K., Grand Rapids, Mich.	1873	Kent, John B., Putnam, Conn.	1889	Lash, Hugh M., Indianapolis, Ind.	1888
Johnson, H. A., Chicago, Ill.	1873	Kerlin, Isaac N., Elwyn, Pa.	1865	Lash, J. W., Chillicothe, O.	1883
Johnson, H. L. E., Washington, D. C.	1884	Kerr, Edw. E., Chattanooga, Tenn.	1890	Lassing, H. C., Union, Ky.	1890
Johnson, H. P., Houston, Minn.	1887	Ketchum, G. A., Mobile, Ala.	1880	Latham, H. W., Latham's Store, Mo.	1886
Johnson, J. E., Lebanon Junction, Ky.	1887	Kewley, J. R., Chicago, Ill.	1880	Latham, P. H., Weatherly, Pa.	1884
Johnson, Jos. Taber, Washington, D. C.	1876	Keyser, Peter D., Philadelphia, Pa.	1870	Lathrop, Henry K., Royal Oak, Mich.	1884
Johnson, John W., Boston, Mass.	1887	Keyt, Marshall H., Cincinnati, O.	1888	Lathrop, J. M., Dover, O.	1884
Johnson, Levi C., Fountain City, Ind.	1888	Kibler, C. B., Corry, Pa.	1876	Lathrop, M. C., Dover, N. H.	1881
Johnson, O., Worthington, O.	1883	Kiefer, Herman, Detroit, Mich.	1890	Latimer, Thomas S., Baltimore, Md.	1884
Johnson, S. C., Hudson, Wis.	1882	Kier, Wm., St. Louis, Mo.	1886	Laughlin, Chas. S., Paris, Ill.	1886
Johnson, Thomas M., Buffalo, N. Y.	1884	Kiernan, Jas. G., Chicago, Ill.	1888	Laughton, S., Bangor, Me.	1876
Johnson, Wm. H., Dudley, Pa.	1888	Kierulf, B. F., Los Angeles, Cal.	1882	Lawson, Geo. B., New Orleans, La.	1885
Johnston, Christopher, Baltimore, Md.	1855	Kilgore, J. C., Monmouth, Ill.	1882	Lawrence, Flores F., Columbus, O.	1888
Johnston, G. W., Fairmount, Neb.	1887	Kimball, Amy Garrison B., Jackson, Mich.	1878	Lawrence, W. B., Batesville, Ark.	1879
Johnston, M. F., Richmond, Ind.	1888	Kimball, Arthur H., Battle Creek, Mich.	1889	Lautenbach, Louis J., Philadelphia, Pa.	1889
Johnston, W. W., Washington, D. C.	1884	Kimball, H. H., Minneapolis, Minn.	1886	Leach, Thos. W., New Market, N. H.	1878
Johnstone, A. W., Danville, Ky.	1888	Kime, Rufus R., Petersburg, Ind.	1886	Leadham, J. W., Franklin, Pa.	1882
Jones, Albert M., Eaton, O.	1888	King, A. F. A., Washington, D. C.	1881	Leake, E. K., Collierville, Tenn.	1886
Jones, Alfred, Cornersville, Tenn.	1890	King, Cyrus B., Allegheny, Pa.	1884	Leale, C. A., New York, N. Y.	1876
Jones, D. W., Portsmouth, N. H.	1884	King, E. H., West Liberty, Iowa	1884	Leaman, Brainard, Leaman Place, Pa.	1872
Jones, Emmett L., Florence, Ala.	1890	King, Ferdinand, New York, N. Y.	1890	Leaman, Henry, Philadelphia, Pa.	1872
Jones, Frank S., Medina, O.	1883	King, Oscar A., Chicago, Ill.	1889	Leaming, Jas. R., New York, N. Y.	1880
Jones, George E., Cincinnati, O.	1888	King, Warren R., Greenfield, Ind.	1884	Leaning, John K., Cooperstown, N. Y.	1884
Jones, George S., Covington, Ind.	1887	King, Willis P., Kansas City, Mo.	1884	Le Baron, Robert, Pontiac, Mich.	1887
Jones, G. Wheeler, Danville, Ill.	1873	Kingman, Eugene, Providence, R. I.	1889	Ledlie, J. H., Pittsfield, Ill.	1878
Jones, H. I., San Francisco, Cal.	1873	Kinsley, B. F., San Antonio, Texas	1886	Lee, Benjamin, Philadelphia, Pa.	1868
Jones, J. B., Bolivar, Tenn.	1890	Kinloch, R. A., Charleston, S. C.	1883	Lee, Elmer, Chicago, Ill.	1886
Jones, John C., Gonzales, Texas	1885	Kinnamon, C. L., Cleveland, O.	1888	Lee, Edward W., Chicago, Ill.	1889
Jones, John D., Cincinnati, O.	1888	Kinne, A. F., Ypsilanti, Mich.	1887	Lee, E. W., Omaha, Neb.	1882
Jones, J. D., Cleveland, O.	1883	Kinnear, A. H., Henry, Ill.	1887	Lee, Wm., Washington, D. C.	1886
Jones, James T., Jackson, Tenn.	1890	Kinney, Elijah C., Norwich, Conn.	1880	Lees, R. B., Nashville, Tenn.	1890
Jones, Joseph, New Orleans, La.	1885	Kirkendall, E. E., West Burlington, Iowa	1887	Leeds, L. L., Lincoln, Ill.	1885
Jones, K. L., Cornersville, Tenn.	1890	Kirk, John, Allegheny, Pa.	1887	Leeper, C. C., Braymer, Mo.	1885
Jones, M. O., Pittsburg, Pa.	1887	Kirkley, Cyrus A., Toledo, O.	1888	Legge, J. H., Pittsburg, Pa.	1890
Jones, Philo O., Red Wing, Minn.	1873	Kirkpatrick, O. B., Cherry Fork, O.	1888	LeGrand, C. W., Hempstead, Texas.	1886
Jones, R. C., Cincinnati, O.	1886	Kitchen, Jos. L., Kalo, Iowa	1884	Leigh, H. G., Petersburg, Va.	1881
Jones, R. E., Gomer, O.	1882	Kitchens, J. H., Jonesboro, Ark.	1885	Leighton, N. W., Brooklyn, N. Y.	1885
Jones, S. J., Chicago, Ill.	1877	Kittinger, M. G., Lockport, N. Y.	1883	Leipsiger, H. A., Burlington, Iowa	1889
Jones, Stanhope, New Orleans, La.	1885	Kittrell, Benj. F., Black Hawk, Miss.	1875	Lemmon, S. W., Albion, Ind.	1887
Jones, Talbot, St. Paul, Minn.	1888	Kleinschmidt, C. H. A., Washington, D. C.	1880	Lemoine, E. S., St. Louis, Mo.	1886
Jones, Toland, Columbus, O.	1883	Kline, W. J. K., Greensburg, Pa.	1889	Lemoyne, F., Pittsburg, Pa.	1883
Jones, T. W., Columbus, O.	1883	Klingensmith, I. P., Blairsville, Pa.	1878	Lenhart, W. C., Zanesville, O.	1883
Jones, W. J., Goldsboro, N. C.	1889	Knapp, Chas. P., Wyoming, Pa.	1889	Lenoir, B. B., Lenoira, Tenn.	1849
Jones, W. P., Nashville, Tenn.	1890	Knapp, S. O., Frankfort, Ind.	1884	Lenow, James H., Little Rock, Ark.	1875
Jones, W. T., Georgetown, Texas.	1885	Knapp, W. M., Asylum, Neb.	1882	Leonard, B. S., West Liberty, O.	1884
Jones, W. W., Toledo, O.	1886	Knight, Amos, Eaton Rapids, Mich.	1884	Leonard, Homer O., Kansas City, Mo.	1887
Jordan, J. D., Madisonville, Texas.	1885	Knight, Geo. H., Lakeville, Conn.	1889	Leonard, R. L., Chicago, Ill.	1887
Jordan, J. H., Jordan, Tenn.	1890	Knight, Mary C., Aurora, Ill.	1886	Leslie, C. F., Clyde, Kan.	1880
Jordan, J. Walter, Black Hawk, Miss.	1885	Knight, Samuel R., Philadelphia, Pa.	1881	Leslie, C. H., Kansas City, Mo.	1886
Jordan, R. M., St. Louis, Mo.	1881	Knight, Wm., Cincinnati, O.	1888	Leslie, G. B., Oswego, Ill.	1887
Jordan, W. A., Clinton, Ky.	1887	Knipe, J. O., Norristown, Pa.	1880	Leslie, John M., Chillicothe, O.	1888
Joralemon, Jacob C., Toledo, Iowa	1887	Knott, J. M., Sioux City, Iowa	1878	Lester, Elias, Seneca Falls, N. Y.	1889
Jubb, Herbert, Galesburg, Ill.	1882	Knox, J., Snydam, Chicago, Ill.	1887	Letcher, James H., Henderson, Ky.	1885
Juddkins, Wm., Cincinnati, O.	1881	Knox, M. D., Hillsboro, Texas.	1883	Letcher, S. M., Richmond, Ky.	1885
Judson, A. B., New York, N. Y.	1876	Koehler, Max, Cincinnati, O.	1888	Levan, J. R., Philadelphia, Pa.	1884
Juler, H. Candell, Cincinnati, O.	1888			Levick, Jas. J., Philadelphia, Pa.	1884
Jump, David W., Plainfield, Ill.	1883			Levy, Robert, Denver, Colo.	1889
Kahle, Raymond D., Lima, O.	1888			Lewelyn, P. W., Clarinda, Iowa.	1886
Kaiser, Aug., Detroit, Mich.	1876			Lewis, Bransford, St. Louis, Mo.	1890

Lewis, D., Chicago, Ill.	1886	Magoffin, John, St. Louis, Mo.	1884	McCullough, John R., Chicago, Ill.	1887
Lewis, Edwin R., Indianapolis, Ind.	1887	Magruder, C. L., Washington, D. C.	1880	McCurly, W. A., Independence, Ky.	1887
Lewis, Eugene R., Kansas City, Mo.	1885	Maire, Lewis E., Detroit, Mich.	1887	McCurdy, John, Youngstown, O.	1883
Lewis, Jas. R., Grinnell, Iowa	1888	Malone, L. A., Jacksonville, Ill.	1886	McCurdy, S. L., Dennison, O.	1883
Lewis, Wm. M., Greensburg, Ky.	1888	Manire, Amos W., Rochester, Tenn.	1890	McDavid, T., Quincy, Ill.	1884
Lichty, Daniel, Rockford, Ill.	1873	Manley, Thomas H., New York, N. Y.	1889	McDermith, S. T., Denver, Colo.	1881
Lightner, S. B., Sabina, O.	1883	Mann, Charles, Nicholasville, Ky.	1873	McDill, D., Burlington, Iowa.	1882
Lincoln, Daniel F., Geneva, N. Y.	1889	Mann, J. A., Wellington, Mo.	1885	McDill, John R., Milwaukee, Wis.	1887
Lincoln, N. S., Washington, D. C.	1876	Manafelde, A. S., von, Ashland, Neb.	1884	McDonald, Edw. Martin, Beaver Dam, Wis.	1887
Lindley, W. T., Hamilton, Mo.	1886	Marable, T. H., Clarksville, Tenn.	1890	McDonald, Henry, Cynthia, Ky.	1885
Lindsay, Kate, Battle Creek, Mich.	1886	Marbourg, E. L. W., Johnstown, Pa.	1886	McDonald, O. P., Keokuk, Iowa.	1882
Lindsay, C. A., New Haven, Conn.	1884	Marcellus, T. M., Sleepy Eye, Minn.	1882	McDonald, W. B., New Augusta, Ind.	1890
Lindsay, J. Berrien, Nashville, Tenn.	1851	Marchand, J. I., Irwin, Pa.	1883	McDougal, John G., New Lexington, Ohio.	1888
Lincawever, John K., Columbia, Pa.	1879	Marcy, Henry O., Boston, Mass.	1876	McDowell, Herve, Cynthia, Ky.	1885
Link, Harvey, Millard, Neb.	1880	Maris, Clarence, Columbus, O.	1888	McEbright, Thomas, Akron, O.	1867
Link, John E., Terre Haute, Ind.	1877	Markham, H. C., Independence, Iowa.	1882	McEwan, S. W., Alexander, Minn.	1883
Linn, G. A., Monongahela City, Pa.	1874	Marks, Solon, Milwaukee, Wis.	1877	McFarland, J. F., Nashville, Tenn.	1883
Linn, W. S., York, Neb.	1887	Marmion, W. V., Washington, D. C.	1880	McGaffigan, A. J., Carlyle, Ill.	1887
Linthicum, Daniel A., Helena, Ark.	1873	Marsh, F. L., Mt. Pleasant, Pa.	1881	McGaughey, Chas. F., Chattanooga, Tenn.	1887
Livath, D. G., Columbia City, Ind.	1874	Marsh, Fred. O., Cincinnati, O.	1888	McGaughey, J. B., Winona, Minn.	1872
Lippincott, J. A., Pittsburg, Pa.	1880	Marsh, James P., Troy, N. Y.	1887	McGavoch, F. G., McGavoch, Ark.	1883
Little, John, Bloomington, Ill.	1882	Marsh, J. T., Liberty, Mo.	1877	McGee, J. A., Rice, Texas.	1885
Little, J. Warren, Minneapolis, Minn.	1887	Marshall, Jacob A., Nineveh, Ind.	1883	McGill, J. D., Jersey City, N. J.	1872
Littlefield, H. H., Beardstown, Ill.	1875	Marshall, John S., Chicago, Ill.	1882	McGowan, H., Harrisburg, Pa.	1886
Livingood, J. R., Roseville, Ill.	1883	Marshall, John S., Cleveland, O.	1889	McGowan, Wm. D., California, Pa.	1884
Livingson, J. B., West Middlesex, Pa.	1874	Marshall, S. W., Sparta, Ill.	1886	McGraw, Theodore A., Detroit, Mich.	1874
Livingson, T. M., Columbia, Pa.	1876	Marston, D. E., Monmouth, Me.	1884	McGuire, Hunter, Richmond, Va.	1872
Livingson, T. R., Plattsmouth, Neb.	1887	Martini, C. M., Seattle, Wash.	1883	McHaddon, H., Macon, Ga.	1884
Logan, A. J., Americus, Ga.	1884	Martini, Edward, Philadelphia, Pa.	1890	McHench, W. J., Brighton, Mich.	1882
Logan, J. E., Kansas City, Mo.	1886	Martin, F. H., Chicago, Ill.	1886	McIlvaine, T. M., Peoria, Ill.	1882
Logan, Joseph P., Marietta, Ga.	1863	Martin, Gregory A., Franklin, Mass.	1889	McIntosh, Lyman D., Chicago, Ill.	1889
Logan, Samuel, New Orleans, La.	1885	Martin, J. D., Savannah, Ga.	1880	McIntosh, T. M., Thomasville, Ga.	1885
Lomax, Wm., Marion, Ind.	1850	Martin, R. W., Chatham, Va.	1881	McIntyre, C. W., New Albany, Ind.	1886
Lomergan, Wm. D., Chicago, Ill.	1887	Martin, S. C., Boston, Mass.	1889	McIntyre, J. H., St. Louis, Mo.	1873
Long, A. J., Whitehall, N. Y.	1878	Martin, S. C., Anna, Ill.	1887	McKain, Chas. H., Vicksburg, Miss.	1890
Long, F. A., Madison, Neb.	1890	Martin, Samuel M., Greenfield, Ind.	1878	McKee, E. S., Cincinnati, O.	1885
Long, G. A., Cleveland, Tenn.	1890	Martin, Wm. S., Tuscola, Ill.	1890	McKee, Pleasant W., Wingo, Ky.	1887
Long, John, Coffadellia, Miss.	1889	Martine, G. R., Glenn's Falls, N. Y.	1887	McKellop, H. J., St. Louis, Mo.	1888
Long, J. M., Rich Hill, Mo.	1886	Marvin, J. B., Louisville, Ky.	1886	McKelvey, W. H., Pittsburg, Pa.	1881
Long, John W., Bryan, O.	1888	Mason, Darius, Spokane Falls, Wash.	1876	McKenna, Levi F., Omaha, Neb.	1885
Long, W. H., Cincinnati, O.	1888	Mason, John E., Washington, D. C.	1884	McKenzie, H. M., Elwood, Iowa.	1884
Longshore, Deborah K., Topeka, Kan.	1887	Mason, Lewis D., Brooklyn, N. Y.	1870	McKie, T. J., Woodlawn, S. C.	1883
Longshore, W. R., Hazleton, Pa.	1884	Massey, Isaac, West Chester, Pa.	1883	McKim, Frank E., Marietta, O.	1888
Longstreth, M. Fisher, Sharon Hill, Pa.	1876	Matas, Rudolph, New Orleans, La.	1885	McLaren, A., St. Paul, Minn.	1887
Loomis, E. B., Chicago, Ill.	1887	Mathews, J. M., Louisville, Ky.	1886	McLaughlin, Jas. W., Austin, Texas.	1884
Lord, J. P., Omaha, Neb.	1887	Mathews, O. J., Mayfield, Ky.	1890	McLean, John, Pullman, Ill.	1876
Lossing, Henry C., Union, Ky.	1890	Mathewson, W. B., Somerville, N. J.	1889	McLean, J. L., Winona, Miss.	1890
Louis, Isaac, Boston, Mass.	1889	Mathews, John P., Carlinville, Ill.	1877	McLean, Leroy, Troy, N. Y.	1870
Love, Isaac N., St. Louis, Mo.	1883	Matthews, Luther J., Carthage, Mo.	1886	McLeod, S. B. W., New York, N. Y.	1872
Love, John S., Springfield, Iowa	1877	Maughas, G. M. B., St. Louis, Mo.	1886	McLeay, Donald, Prairieville, Mich.	1883
Love, Wm. S., Winchester, Va.	1881	Maury, R. B., Memphis, Tenn.	1886	McMahan, S. W., Rushville, Ind.	1883
Lovejoy, J. W. H., Washington, D. C.	1864	Maxwell, Allison, Indianapolis, Ind.	1886	McMahan, W. R., Huntingburg, Ind.	1875
Lovelace, C. H., Dukedom, Tenn.	1890	Maxwell, T. J., Keokuk, Iowa.	1876	McMahan, W. K., Mankato, Minn.	1884
Lovell, Carroll M., Dickson, Tenn.	1890	Mayger, John, St. Louis, Mo.	1886	McMann, W. W., Gardner, Ill.	1874
Loving, Starling, Columbus, O.	1876	Maynard, H. H., Los Angeles, Cal.	1889	McManus, James, Hartford, Conn.	1889
Lowder, L. T., Harrodsburg, Ind.	1890	Maynard, John P., Dedham, Mass.	1889	McMasters, D. H., Pryorsburg, Ky.	1890
Lower, Melvin O., N. Manchester, Ind.	1886	Mayo, Edward L., DeKalb, Ill.	1887	McMillan, P. H., Shiloh Hill, Ill.	1886
Lowman, John, Johnstown, Pa.	1853	Mayo, W. W., Rochester, Minn.	1882	McMillen, John W., Columbus, O.	1883
Lowrie, W. L., Tyrone, Pa.	1884	McAhran, J. J., Salt Lake City, Utah.	1885	McMurry, L. S., Louisville, Ky.	1882
Lowry, G. W., Hastings, Mich.	1887	McAllister, J. W., Nashville, Tenn.	1890	McMurray, W. J., Nashville, Tenn.	1890
Lowrey, O. W., Grand Junction, Iowa	1887	McAllister, W. L., Pasadena, Cal.	1886	McNary, Hugh F., Princeton, Ky.	1875
Luff, Theo. R., Cincinnati, O.	1888	McAlmont, J. J., Little Rock, Ark.	1883	McNary, O. C., National Military Home, Kans.	1890
Lukens, C. J., Oskaloosa, Iowa.	1887	McArdle, Thos. E., Washington, D. C.	1884	McNary, W. H., Martinsville, Ill.	1878
Lumsden, Wm. James, Elizabeth City, N. C.	1889	McArthur, D. S., LaCrosse, Wis.	1887	McNeil, George W., Pittsburg, Pa.	1882
Lundgren, Carl E., Denver, Colo.	1886	McArthur, L. L., Chicago, Ill.	1885	McNutt, W. F., San Francisco, Cal.	1882
Lundy, C. J., Detroit, Mich.	1883	McAuliffe, E. L., Chicago, Ill.	1886	McPherson, J. T., Cambridge, O.	1888
Lung, Jesse B., Brooklyn, N. Y.	1889	McCall, J. W., Huntington, Tenn.	1890	McQuesten, E. F., Nashua, N. H.	1881
Lusk, Wm. T., New York, N. Y.	1884	McCampbell, Wm. E., Nashville, Tenn.	1890	McRae, J., Central Mine, Mich.	1890
Luten, Jos. R., Fulton, Ky.	1890	McCandless, W. A., St. Louis, Mo.	1886	McShane, J. T., Carmel, Ind.	1887
Luten, S. W., Cayce, Ky.	1886	McCaskey, G. W., Fort Wayne, Ind.	1886	McSwain, I. A., Paris, Tenn.	1890
Lutz, F. J., St. Louis, Mo.	1886	McChord, R. C., Lebanon, Ky.	1885	McVey, Wm. E., Topeka, Kan.	1890
Lydston, G. Frank, Chicago, Ill.	1886	McClain, W. H., Beaman, Iowa.	1885	McWilliams, S. A., Chicago, Ill.	1877
Lyman, C. N., Wadsworth, O.	1874	McClannahan, A. S., McKenzie, Tenn.	1890	Meachem, John G., Racine, Wis.	1874
Lyman, E. S., Sherburne, N. Y.	1876	McCleary, J. D., Indianola, Iowa.	1887	Meachem, John G., Jr., Racine, Wis.	1886
Lyman, J. V. R., Eau Claire, Wis.	1889	McClellan, B. R., Mad River, O.	1887	Mead, J. A., Pearlington, Miss.	1885
Lyster, Henry F., Detroit, Mich.	1881	McClellan, George, Philadelphia, Pa.	1889	Mead, Thomas, Washington, D. C.	1889
Lytte, Geo. E., Monongahela City, Pa.	1883	McClelland, Cochran, Philadelphia, Pa.	1882	Means, W. H., Marionville, Mo.	1886
Lytte, S. S., Iowa City, Iowa.	1885	McClelland, R. A., Yorkville, Ill.	1887	Mears, J. Ewing, Philadelphia, Pa.	1870
		McCluer Benjamin, Dubuque, Iowa	1878	Meek, E., Argenta, Ark.	1884
		McClure, A. W., Mt. Pleasant, Iowa	1882	Meek, John M., Morgan, Ky.	1888
Mabon, Thomas, Allegheny, Pa.	1873	McClure, J., St. Louis, Mo.	1886	Mehler, Francis C., New London, Iowa.	1887
MacArthur, R. D., Chicago, Ill.	1888	McClure, T. G., Dowds, Iowa.	1884	Meier, Gottlieb C. H., New York, N. Y.	1889
Macfarlane, J. W., Pittsburgh, Pa.	1885	McClurg, John R., West Chester, Pa.	1876	Meisenbach, A. H., St. Louis, Mo.	1886
Macgill, C. G. W., Catonsville, Md.	1884	McClurg, John C., Leipzig, O.	1888	Mendenhall, E. T., New Castle, Ind.	1888
Mackall, Louis, Washington, D. C.	1884	McColl, Hugh, Lapeer, Mich.	1874	Menees, O. H., Nashville, Tenn.	1890
Mackall, Louis, Jr., Washington, D. C.	1890	McCollum, Wm., Brooklyn, N. Y.	1889	Menees, Thomas, Nashville, Tenn.	1890
Mackenzie, J. N., Baltimore, Md.	1884	McCollum, E. J., Tiffin, O.	1885	Mercer, Alfred, Syracuse, N. Y.	1878
Mackenzie, W. R., Chester, Ill.	1884	McComas, Josiah L., Oakland, Md.	1889	Mercer, F. W., Chicago, Ill.	1887
Mackey, Chas. W., Portland, Ind.	1888	McComas, J. M., Sturgeon, Mo.	1886	Mercer, W. M., Pittsfield, Mass.	1884
Mackie, J. H., New Bedford, Mass.	1881	McConaughy, Robert, York, Neb.	1880	Meredith, Marion, Vinton, Iowa	1877
Mackie, Geo., Attleboro, Mass.	1889	McConnell, A. M., Union City, Tenn.	1890	Mergler, Marie L., Chicago, Ill.	1887
Mackie, Wm., Milwaukee, Wis.	1888	McConnell, H. S., New Brighton, Pa.	1882	Merriman, H. P., Chicago, Ill.	1887
Mackres, H. O., Corry, Pa.	1882	McConnell, J. DeWitt, Fargo, N. Dak.	1888	Metcalf, W. A., Steelville, Mo.	1885
Maclean, Donald, Detroit, Mich.	1875	McCormick, S. N., Bowling Green, Ky.	1884	Metcalf, W. F., Detroit, Mich.	1890
Macomber, N. G., Central Village, Mass.	1885	McCormick, S. C., Duluth, Minn.	1879	Mettler, L. Harrison, Philadelphia, Pa.	1890
MacQuigg, Wm., Lyons, Iowa.	1882	McCowan, Jennie, Davenport, Iowa	1882	Meyer, J. H. W., Laporte, Ind.	1888
Macrae, Donald, Council Bluffs, Iowa.	1886	McCoy, George T., Columbus, Ind.	1888	Middelkamp, H. H., Warrenton, Mo.	1886
Macrae, John, Central Mine, Mich.	1890	McCoy, P. Y., Evansville, Ind.	1890	Middleton, Wm. D., Davenport, Iowa	1887
Macready, Jas., Monroe, O.	1888	McCoy, T. N., Laurens, S. C.	1890	Miles, J. D., Schuyler, Neb.	1882
Madden, Thos. L., Nashville, Tenn.	1890	McCraw, Wm. J., Providence, R. I.	1889		
Maddox, L. E., Montpelier, Ind.	1888	McCullough, Howard, Ft. Wayne, Ind.	1890		

Millard, Perry H., St. Paul, Minn.	1881	Mudd, H. H., St. Louis, Mo.	1873	Oliver, John C., Cincinnati, O.	1888
Miller, A. B., Macon, Mo.	1886	Mudd, W. A., Athens, Ill.	1886	Oliver, John H., Indianapolis, Ind.	1888
Miller, A. M., Bird in Hand, Pa.	1880	Mueller, N. J. A., Dyersville, Iowa	1887	Oliver, N. A., Waco, Texas.	1889
Miller, Charles B., Helena, Mont.	1880	Mulhall, J. C., St. Louis, Mo.	1886	Omohundo, C. C., Nashville, Tenn.	1890
Miller, DeLaskie, Chicago, Ill.	1886	Mulheron, J. J., Detroit, Mich.	1887	O'Neal, J. W. C., Gettysburg, Pa.	1875
Miller, D. McLe., Oconomowoc, Wis.	1887	Mullen, Alexander J., St. Louis, Mo.	1890	O'Neal, Laughlin, Somerset, Ind.	1883
Miller, D. P., Huntington, Pa.	1872	Mullen, Thos. J., New Richmond, O.	1888	Ople, Thomas, Baltimore, Md.	1884
Miller, E. C., Rockwell, Iowa.	1882	Munford, S. B., Princeton, Ind.	1884	O'Reilly, P. S., U. S. Army	1873
Miller, E. H., Liberty, Mo.	1878	Munn, J. P., New York, N. Y.	1883	Orme, Henry S., Los Angeles, Cal.	1882
Miller, G. W., Joplin, Mo.	1885	Munson, Jas. D., Traverse City, Mich.	1878	Orr, Samuel M., Anderson, S. C.	1889
Miller, J. H., Oconee, Ill.	1886	Murdoch, James B., Pittsburg, Pa.	1875	Orr, W. M., Fall Creek, Tenn.	1890
Miller, J. H., Redding, Cal.	1889	Murfree, J. B., Murfreesboro, Tenn.	1873	Orth, H. L., Harrisburg, Pa.	1877
Miller, J. J., Wellston, Mo.	1885	Murphy, Edward, New Harmony, Ind.	1884	Orton, Z., Pine Bluff, Ark.	1885
Miller, J. P., Buckhannon, W. Va.	1880	Murphy, Garrett, Garden City, Minn.	1884	Orton, J. G., Binghampton, N. Y.	1883
Miller, Joseph S., York, Pa.	1887	Murphy, James A., Wilkesbarre, Pa.	1878	Osborn, Mary E., Cincinnati, O.	1888
Miller, M. V. B., Meridian, Miss.	1890	Murphy, John A., Cincinnati, O.	1863	Osborn, M. C., Delmar, Iowa	1884
Miller, O. L., Allegheny, Pa.	1877	Murphy, John B., Chicago, Ill.	1887	Osborne, Harris B., Kalamazoo, Mich.	1876
Miller, R. E., Chicago, Ill.	1887	Murphy, John H., St. Paul, Minn.	1877	Ossler, Wm., Baltimore, Md.	1889
Miller, Robert W., Los Angeles, Cal.	1890	Murphy, P. J., Washington, D. C.	1884	Ottile, Charles, La Crosse, Wis.	1884
Miller, T. W., Chicago, Ill.	1877	Murray, L. S., Medina, O.	1874	Otis, Fessenden N., New York, N. Y.	1880
Miller, W. J., Johnson City, Tenn.	1890	Murray, Robert D., U. S. M.-Hosp. Serv.	1872	Outen, W. B., So. St. Louis, Mo.	1873
Milliken, Daniel, Hamilton, O.	1882	Murray, R. N., Flint, Mich.	1876	Overholt, D. W., Columbus Junction, Iowa	1876
Mills, H. R., Port Huron, Mich.	1874	Murrell, T. E., Little Rock, Ark.	1877	Overstreet, W. C., Sedalia, Mo.	1886
Mills, J. T., Jersey, O.	1890	Musser, Charles, Sumner, Aaronsburg, Pa.	1887	Owen, A. M., Evansville, Ind.	1886
Minard, Eliza J. C., Brooklyn, N. Y.	1889	Musser, J. Henry, Lampeter, Pa.	1880	Owen, May R., Brooklyn, N. Y.	1890
Miner, A. G., Niles, O.	1885	Musser, John H., Philadelphia, Pa.	1889	Owens, C. D., Eola, La.	1885
Miner, D. W., Ware, Mass.	1878	Mussey, W. L., Cincinnati, O.	1890	Owens, John E., Chicago, Ill.	1877
Minges, George, Dubuque, Iowa.	1883	Myers, Alpheus M., Ft. Wayne, Ind.	1888	Owsley, M. T., Glasgow, Ky.	1890
Minch, A. K., Philadelphia, Pa.	1884	Myers, Henry K., Edinboro, Ind.	1884	Oyler, P. H., Mt. Pulaski, Ill.	1885
Minney, John E., Topeka, Kans.	1886	Myers, J. C., Clinton, Ill.	1886		
Mitchell, Charles, Nashville, Tenn.	1890	Myers, S. Oscar, Mt. Vernon, N. Y.	1889		
Mitchell, D. L., Cassville, Mo.	1885	Myers, Wm. H., Ft. Wayne, Ind.	1883		
Mitchell, Edwin W., Cincinnati, O.	1888				
Mitchell, Giles S., Cincinnati, O.	1888	Nash, Alfred, Joliet, Ill.	1872	Pace, J. M., Dallas, Texas	1884
Mitchell, John H., Mt. Vernon, Ill.	1886	Nash, E. K., Montrose, O.	1890	Paddock, John H., Philadelphia, Pa.	1878
Mitchell, John W., Superior, Neb.	1884	Nash, H. M., Norfolk, Va.	1879	Paddock, F. K., Pittsfield, Mass.	1880
Mitchell, John W., Providence, R. I.	1889	Neal, W. A., Elkhart, Ind.	1886	Page, H. R., Des Moines, Iowa.	1882
Mitchell, M. R., Topeka, Kans.	1885	Neeley, J. J., Jr., Bolivar, Tenn.	1890	Page, R. F., Powersville, Mo.	1888
Mitchell, Orlando, Marshall, Ill.	1888	Neer, H. C., Park Ridge, N. J.	1890	Page, R. C. M., New York, N. Y.	1881
Mitchell, R. J., Girard, Ind.	1886	Neff, John, Baltimore, Md.	1884	Paine, Asa M., Woonsocket, R. I.	1889
Mitchell, R. W., Memphis, Tenn.	1879	Neffel, Wm. B., New York, N. Y.	1870	Paine, C. F., Comanche, Texas.	1885
Mitchell, T. A., Owensville, O.	1888	Neilson, John L., U. S. Navy	1880	Paine, J. F. Y., Galveston, Texas.	1885
Mitchell, W. F., Lancaster, Mo.	1886	Nelson, A. W., New London, Conn.	1888	Paine, W. M., Aberdeen, Miss.	1886
Mock, J. W., Covington, Ind.	1888	Nelson, D. E., Chattanooga, Tenn.	1890	Painter, Wm. P., Darby, Pa.	1889
Moffett, E. D., Indianapolis, Ind.	1890	Nelson, Daniel T., Chicago, Ill.	1877	Palmer, Chas. N., Lockport, N. Y.	1878
Moffett, Wm. R., Lafayette, Ind.	1887	Nelson, Samuel N., Revere, Mass.	1884	Palmer, E. A., Hartford, Mich.	1883
Monette, Geo. N., New Orleans, La.	1884	Nesbitt, Geo. W., Sycamore, Ill.	1878	Palmer, Gideon S., Washington, D. C.	1854
Montelius, R. W., Mt. Carmel, Pa.	1890	Newman, H. P., Chicago, Ill.	1887	Palmer, Henry, Janesville, Wis.	1876
Montgomery, Edward E., Philadelphia, Pa.	1889	Newman, Millard M., Edgewood, Iowa.	1882	Palmer, W. H., Providence, R. I.	1889
Montgomery, H. T., South Bend, Ind.	1883	Newman, Robert, New York, N. Y.	1872	Pancoast, Wm. H., Philadelphia, Pa.	1876
Montgomery, John, Chambersburg, Pa.	1880	Neyman, A. M., Butler, Pa.	1883	Pantzer, Hugh O., Indianapolis, Ind.	1887
Montgomery, Liston H., Chicago, Ill.	1882	Nichell, Henry, Buffalo, N. Y.	1863	Paoli, Gerhard C., Chicago, Ill.	1861
Montgomery, W. T., Chicago, Ill.	1886	Nicholas, James, Bradford, Pa.	1888	Parham, F. W., New Orleans, La.	1886
Moody, G. W., Shelbyville, Tenn.	1890	Nichols, A. H., Boston, Mass.	1890	Parish, Wm. H., Philadelphia, Pa.	1889
Moody, J. C., Adams Station, Tenn.	1890	Nichols, Alva W., Greenville, Mich.	1883	Park, Aug. V., Chicago, Ill.	1886
Moody, Mary B., New Haven, Conn.	1889	Nicol, John H., Lacona, Iowa	1887	Park, George, Sioux City, Iowa.	1888
Moody, M. B., Chatham Centre, O.	1883	Nicoll, H. D., New York, N. Y.	1883	Park, J. Walter, Harrisburg, Pa.	1884
Moon, O. W., Lockport, Ill.	1874	Nicolson, W. Perrin, Atlanta, Ga.	1889	Park, Roswell, Buffalo, N. Y.	1877
Mooney, F. B., St. Louis, Mo.	1886	Noble, C. M., McLean, Ill.	1882	Park, R. W., Waco, Texas.	1884
Moor, W. L., Tallahassee, Fla.	1885	Norman, Seaton, Evansville, Ind.	1890	Park, Wm. M., Indianapolis, Iowa.	1880
Moore, A. A., Camden, S. C.	1890	Norris, Alfred L., Cambridge, Mass.	1876	Parke, Chas. R., Bloomington, Ill.	1887
Moore, David W., Waupun, Wis.	1887	Norris, F. O., Eagle Lake, Texas.	1885	Parke, T. E., Downingtown, Pa.	1890
Moore, Edward M., Rochester, N. Y.	1849	North, Alfred, Waterbury, Conn.	1866	Parker, Charles B., Cleveland, O.	1887
Moore, Jonas Patrick, Yazoo City, Miss.	1869	North, John, Toledo, O.	1877	Parker, Charles C., Fayette, Iowa.	1884
Moore, O. T., Narissa, Ill.	1886	North, John D., Jackson, Mich.	1874	Parker, Delos L., Detroit, Mich.	1888
Moore, Perry G., Wabash, Ind.	1883	North, Nelson L., Brooklyn, N. Y.	1885	Parker, G. G., Cairo, Ill.	1886
Moore, E. C., Omaha, Neb.	1882	Norton, J. J., Monroe City, Mo.	1886	Parker, Jacob J., Pennington Point, Ill.	1890
Moore, Wm. New Lisbon, O.	1878	Norton, O. D., Cincinnati, O.	1855	Parker, Joseph, Colfax, Ind.	1886
Moore, Wm. G., St. Louis, Mo.	1888	Norton, Thomas M., Washington, D. C.	1889	Parker, M. Greeley, Lowell, Mass.	1877
Moran, John F., Washington, D. C.	1890	Nott, Thomas H., Goliad, Texas.	1884	Parkes, C. T., Chicago, Ill.	1882
Morey, Herbert A., Alta, Iowa.	1888	Nowlin, J. B., Nashville, Tenn.	1885	Parkhurst, J. F., Danvers, Ill.	1887
Morgan, A. W., DeWitt, Iowa.	1886	Nowlin, J. S., Shelbyville, Tenn.	1890	Parkinson, James H., Sacramento, Cal.	1884
Morgan, D. Porter, Clarksburg, W. Va.	1885	Noxon, D. C., Bloomington, N. Y.	1884	Parr, Thos. S., Indianola, Iowa.	1879
Morgan, E. C., Washington, D. C.	1881	Noyes, A. A., Minneapolis, Minn.	1874	Parish, Joseph, Burlington, N. J.	1847
Morgan, Henry W., Nashville, Tenn.	1890	Noyes, Henry D., New York, N. Y.	1864	Parsons, C. H., Rushville, Ind.	1884
Morgan, Jas. Dudley, Washington, D. C.	1889	Noyes, Hiram J., McConnellsville, O.	1876	Parsons, Frank S., Boston, Mass.	1889
Morgan, J. M., Spokane Falls, Wash.	1884	Noyes, James F., Detroit, Mich.	1873	Parsons, John, Kingsbridge, N. Y.	1880
Morris, J. F., Liberty, Ind.	1876	Nunn, R. J., Savannah, Ga.	1876	Parsons, John W., Portsmouth, N. H.	1870
Morris, John, Baltimore, Md.	1868	Nunn, Wm. T., Chestnut Bluff, Tenn.	1890	Parvin, Theophilus, Philadelphia, Pa.	1867
Morris, Jonathan, Ironton, O.	1878	Nutt, F. L., Marengo, Ill.	1888	Paschal, Frank, Chihuahua, Mexico.	1888
Morris, N. G., Trenton, Ky.	1890	Nutting, D. H., Randolph, Vt.	1880	Patch, Franklin Fletcher, Boston, Mass.	1865
Morris, R. T., New York, N. Y.	1889	Nye, F. T., Beloit, Wis.	1887	Patchin, Robert A., Des Moines, Iowa.	1883
Morrison, Ambrose, Nashville, Tenn.	1890			Pattce, Asa F., Boston, Mass.	1884
Morrison, J. P., Chicago, Ill.	1882			Patten, F. H., National Military Home, O.	1884
Morrison, S. J., Memphis, Tenn.	1882			Patton, G. E., Kingsport, Tenn.	1890
Morse, C. W., Dowagiac, Mich.	1882			Patterson, Albert C., Washington, D. C.	1889
Mortland, J. C., Edgerton, O.	1874			Patterson, A. V., Mansfield, O.	1880
Morton, Thos. G., Philadelphia, Pa.	1880			Patterson, A. W., Indianapolis, Ind.	1875
Morton, Thos. S., K. Philadelphia, Pa.	1889			Patterson, DeWitt C., Washington, D. C.	1881
Moses, Gratz A., St. Louis, Mo.	1873			Patterson, Duncan N., Mangum, N. C.	1881
Moses, T. Freeman, Urbana, O.	1888			Patterson, Philo D., Charlotte, Mich.	1878
Mosgrove, Jas. M., Urbana, O.	1887			Patterson, R. J., Batavia, Ill.	1876
Mosgrove, S. M., Urbana, O.	1880			Paulding, O. P., Anderson, Cal.	1882
Mosher, Geo. C., Kansas City, Mo.	1890			Payne, Frank Howard, Berkeley, Cal.	1884
Mossman, Beriah E., Greenville, Pa.	1874			Payton, Daniel, Stockton, Cal.	1871
Mouttram, C. V., Lawrence, Kan.	1873			Peabody, James H., Omaha, Neb.	1870
Mounds, James L., Morrow, O.	1882			Pearce, D. M., Union City, Pa.	1890
Mowery, Harry A., Marietta, Pa.	1889			Pearce, Henry C., Urbana, O.	1888
Mowry, Robert B., Allegheny City, Pa.	1890			Pearman, J. T., Champaign, Ill.	1887
Moyer, Harold N., Chicago, Ill.	1888			Pearse, S. H., Mt. Vernon, Ind.	1875
				Pearson, John S., Louisiana, Mo.	1886
				Pease, Geo. C., Fulton, Mich.	1888

Pease, J. B., Concordia, Miss.	1885	Price, Joseph, Philadelphia, Pa.	1868	Richards, W. M., Joliet, Ill.	1883
Peck, C. W., Brandon, Vt.	1880	Price, Joseph L., Sherman, Ky.	1888	Richards, W. O., Waterloo, Iowa.	1885
Peck, Frank P., Mt. Pleasant, Iowa.	1889	Pritchard, J. B., St. Louis, Mo.	1890	Richardson, Alex. P., Walpole, N. H.	1880
Peck, George, Elizabeth, N. J.	1884	Priestly, James T., Des Moines, Iowa.	1886	Richardson, Charles W., Washington,	
Peck, J. M., Arlington, Ky.	1890	Priestman, J. L., Neponset, Ill.	1889	D. C.	1889
Peck, W. F., Davenport, Iowa.	1885	Prince, A. E., Jacksonville, Ill.	1884	Richardson, Edward, Louisville, Ky.	1874
Peckham, F. H., Jr., Providence, R. I.	1880	Pritchett, G. L., Fairbury, Neb.	1884	Richardson, E. H., Cedarstown, Ga.	1885
Pedigo, Lewis G., Roanoke, Va.	1889	Probasco, John B., Plainfield, N. J.	1888	Richardson, M. H., Boston, Mass.	1889
Peebles, G. H., Lincoln, Neb.	1885	Proctor, E. G., Kane, Ill.	1886	Richardson, Nicholas D., Nashville,	
Peltz, Josiah, Philadelphia, Pa.	1885	Prouty, Ira W., Keene, N. H.	1889	Tenn.	1890
Pendleton, F. Milford, Magnolia, Ill.	1889	Pruyn, Charles B., Chicago, Ill.	1888	Richardson, N. S., Macon, Ga.	1887
Pennell, W. W., Fredericktown, O.	1888	Pugh, John W., Upland, Ind.	1875	Richardson, Tobias Gibson, New Or-	
Penrose, C. B., Philadelphia, Pa.	1888	Pugh, Thomas B., Napoleonville, La.	1885	leans, La.	1855
Pepper, Wm., Philadelphia, Pa.	1872	Purdy, Charles W., Chicago, Ill.	1887	Richardson, Wm. L., Montrose, Pa.	1863
Percy, James F., Galesburg, Ill.	1887	Purple, S. S., New York, N. Y.	1884	Richardson, Z. A., Rural Hill, Tenn.	1860
Perkins, Francis M., Philadelphia, Pa.	1887	Pursell, Howard, Bristol, Pa.	1889	Richey, S. O., Washington, D. C.	1877
Perkins, George, Somerset, Ky.	1875	Purviance, Geo., U. S. Mar.-Hosp. Serv.	1888	Richings, H., Rockford, Ill.	1886
Perkins, Jabez, Owosso, Mich.	1882	Purviance, S. M., Crawfordsville, Ind.	1875	Richmond, Peter E., Mt. Pleasant, Mich.	1887
Perl, Michael, Houston, Texas.	1885	Putnam, J. M., Chelsea, Mass.	1880	Richmond, W. W., Clinton, Ky.	1885
Perry, J. G., New York, N. Y.	1872	Putney, Wm. G., Prairie Centre, Ill.	1887	Richards, W. M. L., Philadelphia, Pa.	1874
Perry, N. M., Troupsburg, N. Y.	1885	Pyles, R. A., Washington, D. C.	1889	Ricketts, B. M., Cincinnati, O.	1888
Pettit, Richard R., Dayton, O.	1888	Pynchon, Edward, Chicago, Ill.	1886	Ricketts, E. S., Cincinnati, O.	1884
Peyton, Jas. F., Stanford, Ky.	1888			Riddell, S. S., Chippewa Falls, Wis.	1874
Pfaff, Orange G., Indianapolis, Ind.	1888	Quast, E., von, Kansas City, Mo.	1890	Ridenour, Albert W., Massillon, O.	1877
Phelps, Wm. C., Buffalo, N. Y.	1878	Quimby, Isaac N., Jersey City, N. J.	1872	Ridge, Isaac M., Kansas City, Mo.	1890
Phillip, Hugo, Waukesha, Wis.	1887	Quinn, Oliver B., McComb, Miss.	1888	Rieger, Joel H., Kansas City, Mo.	1886
Phillips, Ellis, New Haven, Pa.	1876	Quinn, Allen T., Wilmington, O.	1880	Rigg, J. E., Wilkinsburg, Pa.	1883
Phillips, E. L., Galesburg, Ill.	1874	Quinn, John H., Blue Springs, Neb.	1888	Riggen, John A., What Cheer, Iowa.	1887
Phillips, H. H., Vandalla, Mich.	1882	Quirk, Howard W., Cleveland, O.	1889	Riggs, E. S., Allegheny, Pa.	1876
Phillips, John, Stevens Point, Wis.	1884			Riggs, T. S., Providence, Mo.	1886
Phillips, Thomas H., Canton, O.	1883			Rippy, J. M., Providence, Tenn.	1890
Phillips, W. A., Salina, Kan.	1886			Ristine, C. E., Knoxville, Tenn.	1890
Philpott, J. W., Ft. Madison, Iowa.	1880	Rackford, B. K., Newport, Ky.	1888	Ristine, Harley G., Ft. Dodge, Iowa.	1883
Phythian, C. T., Cincinnati, O.	1887	Rahauer, Geo. G., Pittsburg, Pa.	1878	Ristine, Henry, Cedar Rapids, Iowa.	1877
Pickard, P. M., Vernon, O.	1883	Rahner, C. A., Harrisburg, Pa.	1884	Ristine, J. M., Cedar Rapids, Iowa.	1887
Pierce, S. N., Cedar Falls, Iowa.	1885	Raines, N. F., White Haven, Tenn.	1885	Ritchey, John A., Oil City, Pa.	1876
Pierson, Allen, Spencer, Ind.	1887	Ramsey, D. C., Mt. Vernon, Ind.	1885	Ritchie, Lewis W., Georgetown, D. C.	1889
Pierson, Wm., Orange, N. J.	1876	Ramsey, R. W., St. Thomas, Pa.	1880	Rivard, G. J., Assumption, Ill.	1886
Pillow, R. H., Butler, Pa.	1884	Randall, B. Alex., Philadelphia, Pa.	1890	Rives, Wm. Cabell, New York, N. Y.	1889
Pine, O. S., St. Paul, Minn.	1882	Randall, I. E., West Bay City, Mich.	1887	Robb, Wm. H., Amsterdam, N. Y.	1878
Pinkerton, Thos. H., Oakland, Cal.	1881	Rankin, D. N., Allegheny, Pa.	1878	Robbins, A. H., Rochester, Ind.	1890
Pinkham, Jos. G., Lynn, Mass.	1889	Rankin, F. H., Newport, R. I.	1889	Robbins, M. M., Aurora, Ill.	1877
Piney, Chas. H., Derby, Conn.	1875	Ranney, George E., Lansing, Mich.	1874	Roberts, Deering J., Nashville, Tenn.	1875
Pipes, J. H., Wheeling, W. Va.	1882	Ransohoff, Joseph, Cincinnati, O.	1882	Roberts, H. C., Nashville, Tenn.	1890
Pipino, W. C., Des Moines, Iowa.	1888	Ransom, A. A., South Orange, N. J.	1887	Roberts, John B., Philadelphia, Pa.	1881
Pitner, Thos. J., Jacksonville, Ill.	1872	Ransom, H. B., Burlington, Iowa.	1877	Roberts, J. C., Pulaski, Tenn.	1890
Pitman, Newson J., Tarboro, N. C.	1849	Ransom, N. Martin, North Carver, Mass.	1889	Roberts, W. O., Louisville, Ky.	1877
Pixley, Chelius S., Elkhart, Ind.	1883	Ransom, W. C., Farmington, Tenn.	1890	Robertson, J. C., Council Bluffs, Iowa.	1885
Plecker, James H., Chicago, Ill.	1885	Ranson, S. W., Dodge Centre, Minn.	1882	Robinson, A. C., St. Louis, Mo.	1886
Plumb, E. B., Ames, Iowa.	1887	Rathmell, John R., Chattanooga, Tenn.	1890	Robinson, A. R., New York, N. Y.	1886
Plummer, R. H., San Francisco, Cal.	1885	Rauch, John H., Springfield, Ill.	1875	Robinson, G. L., Lebanon, Tenn.	1890
Plummer, Samuel C., Rock Island, Ill.	1873	Rawlins, John W., Washington, D. C.	1884	Robinson, J. G., West Newton, Pa.	1888
Plummer, Samuel C., Jr., Lu Verne		Rawson, Allen A., Corning, Iowa.	1884	Robinson, P. Gervais, St. Louis, Mo.	1885
Min.	1887	Ray, J. Morrison, Louisville, Ky.	1886	Robinson, Rienzi, Donaldsonville, Conn.	1889
Plunkett, J. D., Nashville, Tenn.	1890	Ray, John, Newcastle, Ind.	1870	Robinson, S. E., West Union, Iowa.	1882
Poock, Eli D., Shreve, O.	1884	Rea, O., Marmont, Ind.	1890	Robinson, Wm. J., Lapeer, Wis.	1888
Pogue, Jos., Edwardsville, Ill.	1881	Read, A. N., Norwalk, O.	1885	Robinson, W. L., Danville, Va.	1881
Polk, John L., Arcola, Ill.	1887	Read, Caleb R., Middleport, O.	1883	Robinson, W. S., Taunton, Mass.	1880
Pollock, S., St. Louis, Mo.	1882	Read, Newton S., Chandlerville, Ill.	1873	Robison, James D., Wooster, O.	1859
Pollman, L. P., St. Louis, Mo.	1886	Reagan, G. L., Warwick, Pa.	1876	Robison, John A., Chicago.	1887
Pollock, Alex. McCandless, Pittsburg,		Reagan, J. A., Weaverville, N. C.	1885	Rochelle, W. F., Jackson, Tenn.	1890
Pa.	1890	Reager, Frank B., Flat Creek, Tenn.	1890	Rockwell, LaRue D., Union City, Wash.	1888
Pollock, W. L., Heyworth, Ill.	1882	Reamy, Thaddeus A., Cincinnati, O.	1887	Rockwood, C. A., Nevada, Mo.	1885
Pomerene, P. P., Berlin, O.	1876	Reber, W. M., Bloomberg, Pa.	1884	Rodgers, John H., Springfield, O.	1883
Pontius, Lorrin W., Canton, O.	1887	Redman, Spence, Platte City, Mo.	1885	Roe, John O., Rochester, N. Y.	1880
Pontius, Maria G., Canton, O.	1888	Redrow, Isaac, Williamsburg, O.	1883	Roebuck, D. V., Dalton, O.	1890
Pope, John H., Marshall, Texas.	1875	Reece, Andrew B., Cedar Rapids, Iowa.	1880	Roeth, A. Gaston, Boston, Mass.	1885
Porre, Richard J., Cincinnati, O.	1888	Reed, Boardman, Atlantic City, N. J.	1884	Rogers, Aaron G., Parker, Ind.	1888
Porter, A. G., Lebanon, Ind.	1877	Reed, Chas. A., Cincinnati, O.	1888	Rogers, E. A., Laporte, Ind.	1882
Porter, C. B., Boston, Mass.	1889	Reed, R. Harvey, Mansfield, O.	1883	Rogers, H. Raymond, Dunkirk, N. Y.	1868
Porter, David R., Kansas City, Mo.	1888	Reed, T. J., Massillon, O.	1883	Rogers, Wm. B., Memphis, Tenn.	1884
Porter, F. F., Paris, Tenn.	1889	Reed, W. F., Kalida, O.	1878	Rohé, George H., Baltimore, Md.	1884
Porter, G. L., Bridgeport, Conn.	1880	Reeser, Howard S., Reading, Pa.	1884	Rohlfing, C. C., St. Louis, Mo.	1886
Porter, Miles F., Fort Wayne, Ind.	1881	Reeve, James T., Appleton, Wis.	1877	Rohr, C. W., Rockford, Ill.	1877
Porter, Wm., St. Louis, Mo.	1882	Reeve, John C., Dayton, O.	1884	Rolfe, Benjamin F., Staceyville, Iowa.	1882
Porter, Winslow B., Walpole, N. H.	1884	Reeves, W. W., Wills Point, Texas.	1885	Roller, Lewis A., Detroit, Mich.	1883
Post, M. H., St. Louis, Mo.	1886	Reid, E. M., Baltimore, Md.	1884	Roman, Samuel T., Conowingo, Md.	1884
Potter, Frank H., Buffalo, N. Y.	1889	Rembe, C., Fayetteville, Ill.	1889	Romig, Samuel V., Rogers Park, Ill.	1887
Potter, S. O. L., San Francisco, Cal.	1890	Remick, August, Providence, R. I.	1881	Rood, Galen, Stevens Point, Wis.	1888
Potter, W. W., Buffalo, N. Y.	1878	Remondino, P. C., San Diego, Cal.	1890	Rook, Charles W., San Antonio, Texas.	1884
Powell, Alfred H., Baltimore, Md.	1881	Renfro, J. C. B., Lagrange, Texas.	1886	Rooker, James I., Castleton, Ind.	1888
Powell, M. B., Collinsville, Ill.	1886	Reynolds, H. T., Baltimore, Md.	1875	Roome, John S., Calmar, Iowa.	1884
Powell, Chas. B., Albia, Iowa.	1887	Reyburn, Robert, Washington, D. C.	1868	Rooney, Abbey Fox, Quincy, Ill.	1890
Powell, H. H., Cleveland, O.	1883	Reynolds, Albert, Clinton, Iowa.	1887	Rooney, Michael, Quincy, Ill.	1884
Powell, Jas. B., St. Joseph, Tenn.	1890	Reynolds, Arthur R., Chicago, Ill.	1888	Root, Eliza H., Chicago, Ill.	1887
Powell, John Z., Logansport, Ind.	1887	Reynolds, B. O., Lake Geneva, Wis.	1888	Root, Joseph E., Hartford, Conn.	1889
Powell, T. E., Evansville, Ind.	1887	Reynolds, Dudley S., Louisville, Ky.	1872	Rose, Gilbert Lester, Decatur, Mich.	1881
Powell, T. O., Dancyville, Tenn.	1885	Reynolds, E. M., Centreville, Iowa.	1884	Rosenthal, Isaac M., Fort Wayne, Ind.	1887
Powell, T. K., Milledgeville, Ga.	1879	Reynolds, George B., Baltimore, Md.	1889	Rosewater, Charles, Omaha, Neb.	1890
Powell, T. S., Atlanta, Ga.	1876	Reynolds, G. F., Alameda, Cal.	1886	Roskoten, Robert, Peoria, Ill.	1874
Powell, W. S., Defiance, O.	1882	Reynolds, H. J., Chicago, Ill.	1882	Ross, George W., Carrollton, Ill.	1886
Powers, E. M., St. Louis, Mo.	1886	Reynolds, J. D., Creston, Iowa.	1887	Ross, John D., Williamsburg, Pa.	1884
Poyntz, J. M., Richmond, Ky.	1888	Rheinfrank, John H., Perryburg, O.	1882	Ross, J. Frank, Clarion, Pa.	1889
Prather, D. J., Little Rock, Ark.	1885	Rhetz, R. B., Jr., Charleston, S. C.	1890	Ross, J. W., U. S. Navy.	1890
Pratt, Foster, Kalamazoo, Mich.	1874	Rhode, Henry, Green Bay, Wis.	1890	Ross, S. M., Altoona, Pa.	1882
Prentiss, D. Webster, Washington, D. C.	1880	Rhodes, J. E., Chicago, Ill.	1887	Rosse, Irving C., Washington, D. C.	1888
Presbrey, Silas D., Taunton, Mass.	1889	Rhu, Auguste, Marion, O.	1888	Rosser, John C., Brainard, Minn.	1882
Preston, B. I., Rochester, N. Y.	1883	Rice, J. Marcus, Worcester, Mass.	1889	Rotch, T. M., Boston, Mass.	1881
Prewitt, J. V., West Point, Ky.	1890	Rice, R. H., Fremont, O.	1882	Roundtree, Scott L., Hartsville, Ala.	1890
Prewitt, T. F., St. Louis, Mo.	1882	Richards, Chas. H., Georgetown, Del.	1879	Rowe, H. J., Willow Springs, Mo.	1890
Price, A. D., Harrodsburg, Ky.	1884	Richards, Jas. N., Fallington, Pa.	1889		
Price, Geo. H., Nashville, Tenn.	1890				

Rowe, John M., Charleston, Mo.	1886	Seargent, Andrew, Hopkinsville, Ky.	1886	Skinner, D. M., Belleville, N. J.	1886
Rowe, Louis M., Indianapolis, Ind.	1886	Searle, B. W., Ottumwa, Iowa	1882	Skinner, D. N., Auburn, Me.	1889
Rowe, Mark, Redmon, Ill.	1882	Sears, John H., Waco, Texas.	1881	Skinner, S. A., Hoosac Falls, N. Y.	1883
Rowe, Samuel B., Rolla, Mo.	1886	Sears, Mark H., Leadville, Colo.	1887	Skinner, W. M., Anamosa, Iowa	1884
Rowland, A. A., Brunswick, Ga.	1877	Seay, John, Nashville, Tenn.	1890	Slager, J. L., Paulding, O.	1890
Rowland, P. W., Coffeyville, Miss.	1886	Sebastian, C. M., Martin, Tenn.	1890	Slater, A. S., Wataga, Ill.	1883
Rugg, D. F., Hartland, Vt.	1885	Sebring, D. A., Auburn, Ind.	1890	Slater, Catherine B., Aurora, Ill.	1882
Ruggles, Augustus D., New York, N. Y.	1889	Seeley, O. F., Climax, Mich.	1887	Slaydon, C., Etina, Tenn.	1887
Ruggles, Charles A., Stockton, Cal.	1890	Seeley, T. P., Chicago, Ill.	1883	Sloan, A. B., Kansas City, Mo.	1879
Rumbold, T. F., San Francisco, Cal.	1874	Seem, A. A., Bangor, Pa.	1884	Sloan, Milton Granville, Dexter, Iowa.	1885
Rumyon, F. J., Clarksville, Tenn.	1890	Seibert, Wm. H., Steelton, Pa.	1888	Sloan, W. K., Moline, Ill.	1887
Ruschenberger, W. S. W., Philadelphia, Pa.	1890	Seiler, Carl, Philadelphia, Pa.	1886	Slocum, Chas. E., Defiance, O.	1875
Rushmore, J. D., Brooklyn, N. Y.	1881	Seiler, George, Alma, Wis.	1882	Small, A. R., Chicago, Ill.	1887
Russ, Eben J., St. Mary's, Pa.	1884	Selden, Robert, Catskill, N. Y.	1889	Small, E. N., Sedalia, Mo.	1886
Russell, John E., Mt. Vernon, O.	1887	Sell, Edw. H. M., Allentown, Pa.	1867	Small, J. M., Lewiston, Me.	1880
Russell, J. N., Mason, W. Va.	1889	Sellman, Wm. A. B., Baltimore, Md.	1880	Small, J. W., New York, N. Y.	1887
Russell, L. J., Heidenhimer, Texas.	1884	Semple, John, Wilkinsburg, Pa.	1880	Smart, A. R., Toledo, O.	1879
Russell, Thomas P., Oshkosh, Wis.	1873	Senkler, A. E., St. Paul, Minn.	1886	Smart, Charles, U. S. Army.	1884
Ruth, C. E., Muscatine, Iowa.	1886	Senn, Nicholas, Milwaukee, Wis.	1873	Smead, Carol C., Sully, Iowa	1890
Rutherford, Francis A., Grand Rapids, Mich.	1890	Sexton, John Chase, Rushville, Ind.	1887	Smith, Allan P., Baltimore, Md.	1883
Rutherford, R. M., Houston, Texas.	1885	Seybert, F. T., Conncil Bluffs, Iowa	1886	Smith, Andrew J., Wabash, Ind.	1884
Rutledge, S. R., Blairsville, Pa.	1876	Seydewitz, Paul von, New Orleans, La.	1888	Smith, A. Wilkes, Richmond, Ky.	1888
Ryan, George W., Cincinnati, O.	1888	Seymour, W. P., Troy, N. Y.	1877	Smith, Chas Gilman, Chicago, Ill.	1864
Ryburn, John S., Ottawa, Ill.	1886	Seymour, W. W., Troy, N. Y.	1884	Smith, C. H., Mason City, Iowa.	1882
		Shackelford, J. A., Greenville, Miss.	1883	Smith, Carter H., Lebanon, Ind.	1883
		Shackford, C. H., Chelsea, Mass.	1880	Smith, D. B., Cleveland, O.	1883
		Shadden, A. R., Mulberry, Tenn.	1890	Smith, D. W., Newark, N. J.	1876
		Shaffner, John F., Willshire, O.	1888	Smith, E. Burchard, Neb.	1884
		Shaller, John M., Cincinnati, O.	1888	Smith, Eugene, Detroit, Mich.	1873
Sabal, E. T., Jacksonville, Miss.	1875	Shannon, J. D., Greenfield, Tenn.	1890	Smith, E. Fayette, Newark, N. J.	1883
Sabin, Geo. C., Black River, N. Y.	1886	Shannon, J. E., Sharon, Tenn.	1890	Smith, Elsworth F., St. Louis, Mo.	1886
Sabin, Marden, Centerville, Mich.	1875	Sharer, John P., Little Falls, N. Y.	1880	Smith, Edw. L., Seattle, Wash.	1889
Sackett, J. W., Prairieville, Mich.	1883	Sharp, H. J., London, O.	1882	Smith, E. R., Toledo, Ia.	1886
Sager, Joseph, Celina, O.	1883	Sharp, Joseph, Kansas City, Mo.	1888	Smith, F. R., Fairchild, Iowa	1887
Salb, J. P., Jasper, Ind.	1890	Sharp, Wesley H., Parkersburgh, W. Va.	1889	Smith, Gouverneur M., New York, N. Y.	1868
Sale, E. Paul, Memphis, Miss.	1879			Smith, Henry A., Cincinnati, O.	1888
Sanborn, Thomas B., Newport, N. H.	1884	Shattuck, Fred C., Boston, Mass.	1888	Smith, F. T., Chattanooga, Tenn.	1890
Sandberg, K. F. M., Chicago, Ill.	1889	Shaw, Alex. B., St. Louis, Mo.	1886	Smith, J. B. W., Waycross, Ga.	1885
Sanders, A. F., Hot Springs, Ark.	1885	Shaw, E. B., Kansas City, Mo.	1886	Smith, J. Lewis, New York, N. Y.	1880
Sanders, Samuel F., Holdredge, Neb.	1875	Shaw, Thomas W., Pittsburg, Pa.	1881	Smith, Joseph R., U. S. Army.	1874
Sanders, W. B., Milo, Ala.	1890	Shaw, Wm. E., Cincinnati, O.	1888	Smith, Joseph T., Canandaigua, N. Y.	1880
Sanders, W. H., Mobile, Ala.	1890	Shearer, Jas. Y., Sinking Spring, Pa.	1880	Smith, Joel W., Charles City, Iowa	1873
Sanford, W. B., Corinth, Miss.	1890	Sheddan, W. K., Williamsport, Tenn.	1890	Smith, J. W., Pilot Point, Texas	1884
Sansom, Jos. E., Tipton, Iowa	1885	Sheldon, Andrew F., Lyons, N. Y.	1889	Smith, Leander B., Fremont, Neb.	1885
Sapp, F. W., Dagus Mines, Pa.	1890	Sheldon, S. B., Five Mile, O.	1883	Smith, Lee, Bloomington, Ill.	1882
Sargent, Geo. W., Lawrence, Mass.	1889	Shelton, G. A., Shelton, Conn.	1880	Smith, M. M., Cedar Chapel, Tenn.	1885
Sattler, Eric C., Cincinnati, O.	1888	Shepard, Chas. H., Brooklyn, N. Y.	1880	Smith, O. Cincinnati, Austin, Texas.	1885
Sauerhering, Adolph, Mayville, Wis.	1887	Shepard, Chas. Grand Rapids, Mich.	1884	Smith, S. Hanbury, New York, N. Y.	1880
Sauerhering, D., Wausau, Wis.	1889	Shepard, J. C., Winchester, Tenn.	1890	Smith, Stephen, New York, N. Y.	1884
Saunders, Bacon, Bonham, Texas.	1885	Shepard, S. D., Everton, Ind.	1888	Smith, S. W., Newark, N. Y.	1884
Saunders, Dudley D., Memphis, Tenn.	1884	Shepherd, George R., Hartford, Conn.	1881	Smith, Thomas C., Washington, D. C.	1884
Saunders, W. M., Adamsville, Tenn.	1890	Sherman, E. Amelia, National, Iowa	1886	Smith, Wm., Van Wert, O.	1877
Savage, F. M., South Bend, Ind.	1890	Sherman, J. A., Cherokee, Iowa	1886	Smolt, C. F., Nickerson, Kans.	1883
Savage, Giles C., Nashville, Tenn.	1885	Sherman, John M., Paton, Iowa	1887	Smouse, D. W., Des Moines, Iowa	1885
Savage, John P., Sioux City, Iowa.	1888	Sherman, W. B., Manchester, Iowa	1887	Smyth, Gonzalva C., Greencastle, Ind.	1879
Savory, Chas. A., Lowell, Mass.	1877	Sherman, W. S., Newport, R. I.	1889	Snively, Andrew J., Hanover, Pa.	1884
Sawyer, Conant, Auburn, N. Y.	1889	Shibley, J. S., Paris, Ark.	1885	Snively, I. N., Waynesboro, Pa.	1876
Sawyer, Fred A., Wareham, Mass.	1873	Shidler, Geo. W., York, Neb.	1888	Snively, W., Pittsburg, Pa.	1880
Sawyer, Frank M., South Bend, Ind.	1887	Shields, David E., Morristown, Tenn.	1888	Snodgrass, Jesse, Kenton, O.	1883
Sawyer, J. P., Cleveland, O.	1890	Shillito, Fred., Marcellus, Mich.	1890	Snodgrass, J. H., Sparta, Tenn.	1890
Sawyers, John L., Centerville, Iowa.	1887	Shillito, G. M., Allegheny, Pa.	1879	Snook, J. M., Kalamazoo, Mich.	1880
Sawyers, S. H., Unionville, Iowa	1873	Shimwell, B. T., Philadelphia, Pa.	1890	Snow, A. P., Winthrop, Me.	1876
Sayre, Lewis Albert, New York, N. Y.	1848	Shipman, Alfred, Plattsmouth, Neb.	1884	Snow, Edward S., Dearborn, Mich.	1875
Sayre, Reginald H., New York, N. Y.	1887	Shipp, Farinda, Petersburg, Ill.	1881	Snyder, D. J., Scio, O.	1886
Scarborough, J. R., Spring Hill, Ky.	1890	Shively, Joseph W., Washington, D. C.	1881	Solly, S. E., Colorado Springs, Colo.	1889
Scates, D. W., Springfield, Tenn.	1890	Shivers, Offa L., Marion, Ala.	1887	Sotheron, James T., Washington, D. C.	1889
Schaberg, Herman H., Kalamazoo, Mich.	1887	Shober, John B., Philadelphia, Pa.	1890	Souchon, Edmond, New Orleans, La.	1885
Schadle, Jacob E., St. Paul, Minn.	1889	Shoemaker, Geo. Erety, Philadelphia, Pa.	1890	Southern, Iott, Newark, N. J.	1876
Schaefer, C. R., Indianapolis, Ind.	1890	Shoemaker, John V., Philadelphia, Pa.	1878	Southworth, Chas. T., Monroe, Mich.	1889
Schaefer, Edward, Cincinnati, O.	1888	Short, R. N., Mechanicsburg, Pa.	1880	Sowers, Z. T., Washington, D. C.	1887
Schaefer, F. C., Chicago, Ill.	1878	Short, W. H., La Grange, Ind.	1888	Spalding, S. C., Shenandoah, Pa.	1880
Shaffer, Edward W., Kansas City, Mo.	1880	Shrader, J. C., Iowa City, Iowa.	1873	Spalding, S. K., Omaha, Neb.	1890
Schenk, W. L., Osage City, Kan.	1877	Shrady, John, New York, N. Y.	1880	Spear, John W., Mason City, Ill.	1883
Schlossstein, Adolphus, St. Louis, Mo.	1886	Shuell, Thomas J., Parnell, Iowa.	1887	Spear, L. E., Shirley, Ill.	1886
Schmidt, H. E., White Plains, N. Y.	1880	Shugart, T. C. D., Riverside, Cal.	1889	Spencer, Clark E., Ft. Gratiot, Mich.	1874
Schneck, J. M., Carmel, Ill.	1885	Shugert, F. A., Tidiloute, Pa.	1884	Spencer, E. R., Doylestown, O.	1888
Schooler, Lewis, Des Moines, Iowa	1887	Shull, Calvin Q., Montpelier, Ind.	1884	Spencer, E. V., Mt. Vernon, Ind.	1886
Schoonover, Warren, New York, N. Y.	1880	Shurley, Ernest L., Detroit, Mich.	1874	Spencer, Wm., Monticello, Ind.	1890
Schurtz, Perry, Grand Rapids, Mich.	1883	Shurtleff, Geo. A., Stockton, Cal.	1871	Spencer, W. B., Terre Haute, Ind.	1887
Schwangmeyer, Aug., Cincinnati, O.	1888	Sidney, A. W., Fitchburg, Mass.	1881	Spiegelhalter, J., St. Louis, Mo.	1886
Schwartz, Edwin, Knoxville, Ill.	1887	Silliman, J. E., Erie, Pa.	1884	Spilman, S. A., Ottumwa, Iowa.	1882
Scofield, Darius, Washington, Iowa	1887	Silva, C. C. P., Chicago, Ill.	1886	Spitler, Adam, Carthage, Ill.	1884
Scott, A. J., Loudonville, O.	1881	Silver, D. R., Sidney, O.	1883	Sproul, J. S., Warren, Ind.	1883
Scott, B. H., Mt. Vernon, O.	1883	Silver, Henry M., New York, N. Y.	1880	Sprague, Wm. B., Detroit, Mich.	1883
Scott, Frank P., Monongahela, Pa.	1889	Sim, F. L., Memphis, Tenn.	1884	Squibb, Edward H., Brooklyn, N. Y.	1889
Scott, Jas. M., St. Louis, Mo.	1873	Simmons, Gustavus L., Sacramento, Cal.	1871	Squibb, Edward R., Brooklyn, N. Y.	1860
Scott, Jas. W. C., Heckla, Ind.	1888	Simons, C. J., Chicago, Ill.	1884	Stahley, Geo. D., Gettysburg, Pa.	1880
Scott, J. W., St. Charles, Minn.	1890	Simons, Manning, Charleston, S. C.	1870	Stamm, M., Fremont, O.	1883
Scott, N. W., Huntington, Ind.	1888	Simonton, A. C., San Jose, Cal.	1884	Standish, Miles, Boston, Mass.	1889
Scott, Preston B., Louisville, Ky.	1886	Simpson, A. E., Charleston, Mo.	1884	Stanley, Elwood, Sandusky, O.	1883
Scott, Wm., Kokomo, Ind.	1883	Simpson, A. C., Kalamazoo, Mich.	1887	Stanley, F. A., Chicago, Ill.	1886
Scott, W. J., Cleveland, O.	1876	Simpson, Irwin, Kalamazoo, Mich.	1887	Stanley, Geo. H., Pawtucket, R. I.	1889
Scott, Xenophon C., Cleveland, O.	1874	Simpson, Theo. P., Beaver Falls, Pa.	1884	Stanley, Z. T., Laclede, Mo.	1887
Scriber, W. E., Blissfield, Mich.	1883	Simpson, W. C., New Brighton, Pa.	1884	Stansbury, Emory, Appleton, Wis.	1882
Scroggs, J. A., Keokuk, Iowa	1887	Sims, Samuel N., St. Joseph, Ill.	1887	Stanton, Byron, Cincinnati, O.	1882
Scudder, H. Martyn, Chicago, Ill.	1886	Sinclair, A. D., Boston, Mass.	1885	Stanton, J. O., Washington, D. C.	1881
Scull, D. C., Lebanon, Ind.	1890	Sinclair, A. G., Memphis, Tenn.	1885	Stanton, T. P., Chariton, Iowa	1890
Seaman, F. G., Seneca Falls, N. Y.	1889	Sinclair, J. G., Nashville, Tenn.	1886	Staples, Franklin, Winona, Minn.	1871
Seaman, M. W., Shipman, Ill.	1884	Skeer, J. D., Chicago, Ill.	1886	Staples, Geo. M., Dubuque, Iowa.	1872
Searcy, J. T., Tuscaloosa, Ala.	1890	Skilling, M. A., Lonacoming, Md.	1888	Stark, Alice M., Ottumwa, Iowa	1886
		Skillman, Henry M., Lexington, Ky.	1883	Starkey, Horace M., Chicago, Ill.	1887

Starkweather, R. E., Springfield, Ill.	1883	Talbot, E. S., Chicago, Ill.	1881	Tucker, B. St. George, Colorado Springs, Colo.	1886
Starr, G. L., Hudson, O.	1883	Talley, A. N., Columbia, S. C.	1858	Tucker, J. H., Henderson, N. C.	1887
Stedman, Arnold, Denver, Colo.	1887	Tallman, W. L., Mineral Point, Wis.	1884	Tucker, N. G., Nashville, Tenn.	1890
Stedman, Henry R., Boston, Mass.	1886	Taneyhill, G. Lane, Baltimore, Md.	1884	Tucker, R. O., Nashville, Tenn.	1890
Steele, A. J., St. Louis, Mo.	1867	Tanner, Herbert B., South Kaukauna, Wis.	1888	Tuholske, H., St. Louis, Mo.	1885
Steele, D. A. K., Chicago, Ill.	1877	Tate, H. W., Bolivar, Tenn.	1890	Tuller, Willis M., Bowling Green, O.	1888
Steele, George M., Oshkosh, Wis.	1877	Taylor, H. Genet, Camden, N. J.	1890	Tupper, Paul Y., St. Louis, Mo.	1886
Steele, H. K., Denver, Colo.	1883	Taylor, H. Longstreet, Asheville, N. C.	1890	Turnbull, Laurence, Philadelphia, Pa.	1852
Stein, A. H., Cottage Grove, Minn.	1882	Taylor, Jas. Landou, Wheelersburg, O.	1888	Turner, Henry E., Newport, R. I.	1889
Steer, Justin, St. Louis, Mo.	1886	Taylor, James, New York, N. Y.	1878	Turner, S. W., Chester, Conn.	1880
Stein, Alex. W., New York, N. Y.	1870	Taylor, J. M., Corinth, Miss.	1873	Tweedle, J. B., Weatherly, Pa.	1883
Steinback, L. W., Philadelphia, Pa.	1889	Taylor, L. H., Wilkesbarre, Pa.	1886	Twiford, W. H., Geneva, Minn.	1883
Steiner, Lewis H., Baltimore, Md.	1890	Taylor, M. A., Austin, Texas.	1874	Twitmyer, J. H., Sharpsville, Pa.	1884
Stemmetz, E. G., Hokendaqua, Pa.	1878	Taylor, W. A., Booneville, Miss.	1879	Tyler, John H., Clinton, Ill.	1887
Stellwagen, Thos. C., Media, Pa.	1884	Taylor, W. H., Cincinnati, O.	1873	Tyner, T. J., Austin, Texas.	1885
Stephens, A. H., National Military Home, O.	1884	Taylor, W. H. O., Union Hill, N. J.	1888	Tyng, Anita E., Chaseville, Fla.	1877
Stevens, E. L., Silver City, N. Mexico.	1890	Taylor, W. W., Memphis, Tenn.	1886	Tyree, Wm. C., Kansas City, Mo.	1886
Stevens, John B., Nashville, Tenn.	1890	Teal, Norman, Kendallville, Ind.	1878	Tyrell, Gerrard G., Sacramento, Cal.	1881
Stevens, J. K., Ralston Station, Tenn.	1890	Teft, Herbert K., Topeka, Kan.	1886	Tyson, James, Philadelphia, Pa.	1876
Stevens, James B., Nashville, Tenn.	1887	Teft, J. E., Springfield, Mo.	1882		
Sterrett, John P., Pittsburgh, Pa.	1886	Teft, Leslie, Elgin, Ill.	1887	Udell, Columbus N., Blakesburg, Iowa.	1885
Steuart, Jas. A., Baltimore, Md.	1884	Terhune, A. A., Jefferson, Texas.	1884	Uhler, John R., Baltimore, Md.	1876
Stevens, C. L., Athens, Pa.	1890	Terry, J. W., Englewood, N. J.	1887	Ulrich, C. F., Wheeling, W. Va.	1890
Stevens, E. A., Mayfield, Ky.	1890	Tetreault, F. I. E., Orange, N. J.	1880	Ulrich, Wm. B., Chester, Pa.	1875
Stevens, Geo. T., New York, N. Y.	1881	Thackery, Wm. T., Chicago, Ill.	1888	Underwood, W. J., Akron, O.	1880
Stevens, M. B., Defiance, O.	1875	Thatcher, J. P., Pisgah, Mo.	1886	Unger, D. F., Mercersburg, Pa.	1880
Stevenson, Jas. M., Pittsburg, Pa.	1882	Thayer, Alvin, Erie, Pa.	1878	Upham, E. F., Shelby, Ala.	1884
Stewart, F. E., Wilmington, Del.	1882	Thayer, F. C., Waterville, Me.	1884	Uran, B. F., Kankakee, Ill.	1887
Stewart, Jonas, Anderson, Ind.	1884	Thayer, J. W., Gilroy, Cal.	1890		
Stewart, J. H., Exeter, Ill.	1886	Thomas, A. L., Chicago, Ill.	1887	Vail, A. M., Rock Rapids, Iowa.	1887
Stewart, J. T., Monrovia, Cal.	1890	Thomas, F. S., Council Bluffs, Iowa.	1886	Vail, Jonathan B., Lima, O.	1884
Stewart, J. L., Erie, Pa.	1876	Thomas, F. W., Marion, O.	1887	Van Bibber, W. Chew, Baltimore, Md.	1865
Stewart, P. H., Paducah, Ky.	1890	Thomas, Jas. Cary, Baltimore, Md.	1880	Vance, A. J., Harrison, Ark.	1885
Stewart, Robert W., Cincinnati, O.	1888	Thomas, J. D., Pittsburg, Pa.	1880	Vance, W. K., Bristol, Tenn.	1890
Stewart, Thos. H., Church Hill, O.	1876	Thomas, J. P., Pembroke, Ky.	1875	Van Deman, J. H., Chattanooga, Tenn.	1874
Stewart, Wm. S., Philadelphia, Pa.	1876	Thomas, S. C., Milroy, Ind.	1882	Vanderburg, C. R., Columbus, O.	1890
Stiffel, Albert F., Wheeling, W. Va.	1889	Thomas, T. Gaillard, New York, N. Y.	1880	Vanderhoof, H. W., Bloomingdale, Ill.	1888
Stiles, Geo. M., Conshohocken, Pa.	1876	Thomason, H. D., Albion, Mich.	1884	Vanderlaue, John, Muskegon, Mich.	1887
Stille, Alfred, Philadelphia, Pa.	1847	Thompson, A. A., Flint, Mich.	1874	Van Derveer, A., Albany, N. Y.	1879
Stilliams, D. C., Redlands, Cal.	1887	Thompson, C. A., Jefferson City, Mo.	1887	Van Derveer, John R., Brooklyn, N. Y.	1878
Stinchfield, A. W., Eyota, Minn.	1875	Thompson, Fred. H., Fitchburg, Mass.	1889	Van de Warker, Ely, Syracuse, N. Y.	1886
Stinson, J. B., Sherman, Texas.	1885	Thompson, G. W., Winamac, Ind.	1883	Van Eman, John H., Kansas City, Mo.	1884
Stites, F. M., Hopkinsville, Ky.	1890	Thompson, J. Ford, Washington, D. C.	1881	Van Eman, W. J., Leavenworth, Kan.	1885
Stockton, Chas. G., Buffalo, N. Y.	1888	Thompson, John H., Kansas City, Mo.	1885	Van Gasken, Joseph, Luling, Texas.	1889
Stockton, Chas. S., Newark, N. Y.	1889	Thompson, J. L., Indianapolis, Ind.	1883	Van Horne, A. K., Jerseyville, Ill.	1873
Stockton, Frank O., Atlanta, Ga.	1887	Thompson, L. G., Lacon, Ill.	1883	Van Note, E., Hamilton, Mo.	1895
Stockton, Sarah, Indianapolis, Ind.	1890	Thompson, Mary Harris, Chicago, Ill.	1886	Van Pelt, Chas. L., Toledo, O.	1888
Stockwell, Chas. Bliss, Port Huron, Mich.	1887	Thompson, Sylvester, Blandinville, Ill.	1888	Van Winkle, Nelson B., Blanchester, O.	1888
Stone, Alex. J., St. Paul, Minn.	1881	Thompson, Wilbur R., Troy, O.	1888	Van Wyck, R. C., Poughkeepsie, N. Y.	1889
Stone, Isaac S., Washington, D. C.	1885	Thomson, Geo. N., Boston, Mass.	1889	Varian, Wm., Titusville, Pa.	1876
Stone, J. J., Argyle, Minn.	1877	Thomson, Robert Lyle, Spokane Falls, Wash.	1888	Vastine, J. H., Catawissa, Pa.	1876
Stone, T. M., Jasper, Texas.	1885	Thorn, S. S., Toledo, O.	1883	Vaughan, B. A., Columbus, Miss.	1872
Storch, A. B., Alla, Iowa.	1883	Thorne, Wm., San Diego, Cal.	1870	Vaughan, Chas. E., Cambridge, Mass.	1884
Storer, Horatio R., Newport, R. I.	1878	Thorne, Max, Cincinnati, O.	1888	Vaughan, Geo. Tully, Evansville, Ind.	1890
Stowell, J. H., Chicago, Ill.	1887	Thornton, G. B., Memphis, Tenn.	1877	Vaughan, O. M., Covert, Mich.	1887
Straight, A. Miner, Bradford Pa.	1883	Thorp, H. H., Liberty Hill, Texas.	1890	Vaughan, Victor C., Ann Arbor, Mich.	1883
Strain, A. J., London, O.	1886	Thrane, A. D. H., Eau Claire, Wis.	1880	Vennemann, R. T., Troy, Ind.	1890
Straus, Leon, Shepherdsville, Ky.	1890	Thrasher, A. B., Cincinnati, O.	1888	Verity, W. P., Chicago, Ill.	1882
Strauz, P. H., Palatka, Fla.	1890	Tibbets, L., Rockford, Ill.	1880	Vermeyne, J. J. B., New Bedford, Mass.	1880
Strawbridge, Geo., Philadelphia, Pa.	1876	Tichenor, H. H., Newark, N. J.	1880	Vernon, E. R., Dyersburg, Tenn.	1890
Street, D., Baltimore, Md.	1890	Tiffany, F. B., Kansas City, Mo.	1884	Vertrees, C. M., Murrayville, Ill.	1886
Strickler, A. H., Waynesboro, Pa.	1884	Tilley, Robert, Chicago, Ill.	1884	Vincent, Geo. R., Tomah, Wis.	1887
Strickler, A. W., Scottsdale, Pa.	1884	Tillotson, H. J., Chicago, Ill.	1890	Vincent, H. C., Guilford, Ind.	1875
Strickler, M. B., Washington, D. C.	1884	Tipton, F., Selma, Ala.	1880	Vincent, J. R., Wilkinsburg, Pa.	1890
Stringer, S., Brooksville, Fla.	1890	Tipton, Jos. S., Hillsville, Va.	1875	Vinnedge, W. W., La Fayette, Ind.	1873
Strong, A. B., Chicago, Ill.	1886	Tipton, W. R., Las Vegas, New Mexico.	1883	Viollette, J. D., Williamstown, Ky.	1888
Strong, H. W., Byron Centre, Mich.	1882	Todd, C. A., St. Louis, Mo.	1886	Vivian, Godfrey, San Leandro, Cal.	1881
Strong, S. E., Ironton, Mo.	1886	Todd, F. Walton, Coronado, Cal.	1879	Vogler, Chas., Newark, N. J.	1887
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Stuver, E., Rawlins, Wyoming Ter.	1890	Todd, S. S., Kansas City, Mo.	1873		
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Suter, Henderson, Washington, D. C.	1889	Townsend, M. W., Bergen, N. Y.	1876	Wainwright, W. A. M., Hartford, Conn.	1873
Sutherland, W. K., Mansfield, La.	1889	Townsend, W. R., New York, N. Y.	1884	Wakefield, A. N., Johnstown, Pa.	1884
Sutton, H. Harley, Aurora, Ind.	1888	Towsley, Matilda, Kalamazoo, Mich.	1888	Walbridge, J. S., Berlin, Wis.	1887
Sutton, Henry C., Rome, N. Y.	1888	Trabert, J. Wm., Annville, Pa.	1884	Walbridge, Luther P., Decatur, Ill.	1887
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Wedgewood, M. C., Lewiston, Me.	1884	Williams, John F., Chicago, Ill.	1887	Wrightson, Jas. T., Newark, N. J.	1884
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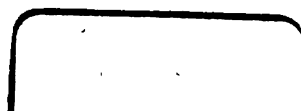
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